

UNIT 1: INTRODUCTION TO COMPUTER NETWORKS

QUESTION 1: Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

ANS: D. All of the Above

QUESTION 2: Routers operate at which layer of the OSI model?

- a. Physical
- b. Transport
- c. Network
- d. Mac sub layer of the data link layer
- e. session

C . network layer :Routing is a function of the network layer

QUESTION 3: Which one of the following extends a private network across public networks?

- a) Local area network
- b) Virtual private network
- c) Enterprise private network

b) virtual private network

QUESTION 4: Physical or logical arrangement of network is

- a) Topology
- b) Routing

- c) Networking
- d) None of the mentioned

ANSWER: a) Topology

QUESTION 5: Fiber optics posses following properties

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap
- d) All of the mentioned

ANSWER: D. All of the mentioned

QUESTION 6: The IETF standards documents are called _____

- a) RFC
- b) RCF
- c) ID
- d) DFC

Answer: a

Explanation: RFC stands for Request For Comments and they are documents that describe methods, behaviors, research, or innovations applicable to the working of the Internet.

QUESTION 7: In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are _____

- a) Added
- b) Removed
- c) Rearranged
- d) Modified

Answer: a

Explanation: Each layer adds its own header to the packet from the previous layer. For example, in

the Internet layer, the IP header is added over the TCP header on the data packet that came from the transport layer.

QUESTION 8: The most important and common protocols associated TCP/IP internetwork layer are.

- i) Internet protocol(IP)
 - ii) Internet control Message Protocol(ICMP)
 - iii) Bootstrap Protocol (BooTP)
 - iv) Dynamic Host Configuration Protocol (DHCP)
 - v) Address Resolution Protocol (ARP)
- A) i, ii, iii and iv only
 - B) i, iii, iv and v only
 - C) ii, iii, iv and v only
 - D) All i, ii, iii, iv and v

ANS: D) All i, ii, iii, iv and v

QUESTION 9: The structure or format of data is called _____

- a) Syntax
- b) Semantics
- c) Struct
- d) formatting

Answer: a

Explanation: The structure and format of data are defined using syntax. Semantics defines how a particular pattern to be interpreted, and what action is to be taken based on that interpretation. In programming languages, syntax of the instructions plays a vital role in designing of the program.

QUESTION 10: Communication between a computer and a keyboard involves _____ transmission.

- a) Automatic
- b) Half-duplex
- c) Full-duplex
- d) Simplex

Answer: d

Explanation: In simplex transmission, data flows in single direction which in this case refers to the data flowing from the keyboard to the computer. Another example would be of the mouse where the data flows from the mouse to the computer only.

QUESTION 11: The first Network was called _____

- a) CNNET
- b) NSFNET

- c) ASAPNET
- d) ARPANET

Answer: d

Explanation: ARPANET stands for Advanced Research Projects Agency Networks. It was the first network to be implemented which used the TCP/IP protocol in the year 1969.

QUESTION 12: A _____ is the physical path over which a message travels.

- a) Path
- b) Medium
- c) Protocol
- d) Route

Answer: b

Explanation: Messages travel from sender to receiver via a physical path called the medium using a set of methods/rules called protocol. Mediums can be guided (wired) or unguided (wireless).

QUESTION 13: A _____ set of rules that governs data communication.

- a) Protocols
- b) Standards
- c) RFCs
- d) Servers

Answer: a

Explanation: In communications, a protocol refers to a set of rules and regulations that allow a network of nodes to transmit and receive information. Each layer in the network model has a protocol set, for example, the transport layer has TCP and UDP protocols.

QUESTION 14: A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

- a) bridge
- b) firewall
- c) router
- d) hub

Answer: c

Explanation: A router is a networking device that forwards data packets between computer networks. Routers perform the traffic directing functions on the Internet. They make use of routing protocols like RIP to find the cheapest path to the destination.

QUESTION 15: Bluetooth is an example of _____

- a) personal area network

- b) local area network
- c) virtual private network
- d) wide area network

Answer: a

Explanation: Bluetooth is a wireless technology used to create a wireless personal area network for data transfer up to a distance of 10 meters. It operates on 2.45 GHz frequency band for transmission.

QUESTION 16: Communication channel is shared by all the machines on the network in _____

- a) broadcast network
- b) unicast network
- c) multicast network
- d) anycast network

Answer: a

Explanation: In a broadcast network, information is sent to all stations in a network whereas in a multicast network the data or information is sent to a group of stations in the network. In unicast network, information is sent to only one specific station. The broadcast address of the network is the last assigned address of the network.

QUESTION 17: In computer network nodes are _____

- a) the computer that originates the data
- b) the computer that routes the data
- c) the computer that terminates the data
- d) all of the mentioned

Answer: d

Explanation: In a computer network, a node can be anything that is capable of sending data or receiving data or even routing the data to its destination. Routers, Computers and Smartphones are some examples of network nodes.

QUESTION 18: Application layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Packet transport

Answer: a

Explanation: Not only application layer, but presentation layer, session layer and transport layer are also implemented in the end system. The layers below are implemented outside the end system, for example, the network layer is implemented on the routers and the physical layer is implemented for the medium.

QUESTION 19: Transport layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Signal transmission

Answer: a

Explanation: Application, Presentation, Session and Transport layer are implemented in the end system. The transport layer handles the process to process delivery of the packet through ports.

QUESTION 20: Delimiting and synchronization of data exchange is provided by _____

- a) Application layer
- b) Session layer
- c) Transport layer
- d) Link layer

Answer: b

Explanation: The session layer provides the mechanism for opening, closing and managing a session between end-user application processes. The session layer 5 is responsible for establishing managing synchronizing and terminating sessions. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model

QUESTION 21: Which of the following statements can be associated with OSI model?

- a) A structured way to discuss and easier update system components
- b) One layer may duplicate lower layer functionality
- c) Functionality at one layer no way requires information from another layer
- d) It is an application specific network model

Answer: c

Explanation: One layer may use the information from another layer, for example timestamp value. The information is contained in the header inserted by the previous layer. The headers are added as the packet moves from higher layers to the lower layers

QUESTION 22: Which address is used on the internet for employing the TCP/IP protocols?

- a) physical address and logical address
- b) port address
- c) specific address
- d) all of the mentioned

Answer: d

Explanation: The physical, logical, port and specific addresses are used in TCP/IP protocol. All the addressing schemes, that is physical (MAC) and logical address, port address and specific address are employed in both TCP/IP model and OSI model. In TCP/IP, the addresses are more focused on the internet implementation of these addresses.

QUESTION 23: TCP/IP model was developed _____ the OSI model.

- a) prior to
- b) after
- c) simultaneous to
- d) with no link to

Answer: a

Explanation: Several TCP/IP prototypes were developed at multiple research centers between 1978 and 1983, whereas OSI reference model was developed in the year 1984. TCP/IP was developed with the intention to create a model for the Internet while OSI was intended to be a general network model.

QUESTION 24: 10. Transmission data rate is decided by _____

- a) network layer
- b) physical layer
- c) data link layer
- d) transport layer

Answer: b

Explanation: Physical layer is a layer 1 device which deals with network cables or the standards in use like connectors, pins, electric current used etc. Basically the transmission speed is determined by the cables and connectors used. Hence it is physical layer that determines the transmission speed in network. Some of the cables used for high speed data transmission are optical fiber cables and twisted pair cables.

QUESTION 25: Which address is used to identify a process on a host by the transport layer?

- a) physical address
- b) logical address
- c) port address
- d) specific address

Answer: c

Explanation: A port number is a way to identify a specific process to which an Internet or other network message is to be forwarded when it arrives at a server. Some examples of port numbers are port 20 which is used for FTP data, port 22 which is used for SSH remote login ,and port 23 which is used for TELNET.

26. How many layers are present in the Internet protocol stack (TCP/IP model)?

- a) 5
- b) 7
- c) 6
- d) 10

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Answer: a

Explanation: There are five layers in the Internet Protocol stack. The five layers in Internet Protocol stack is Application, Transport, Network, Data link and Physical layer. The internet protocol stack model is also called the TCP/IP model and it's used in modern Internet Communication.

27) number of layers in ISO OSI reference model is _____

- a) 5
- b) 7
- c) 6
- d) 10

[View Answer](#)

Answer: b

Explanation: The seven layers in ISO OSI reference model is Application, Presentation, Session, Transport, Network, Data link and Physical layer. OSI stands for Open System Interconnect and it is a generalized model.

28 Which of the following layers is an addition to OSI model when compared with TCP IP model?

- a) Application layer
- b) Presentation layer
- c) Session layer
- d) Session and Presentation layer

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Answer: d

Explanation: The only difference between OSI model and TCP/IP model is that the functions of Presentation and Session layer in the OSI model are handled by the transport layer itself in TCP/IP.

OSI is a generalized model and TCP/IP is an application specific model.

29. Application layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Packet transport

[View Answer](#)

Answer: a

Explanation: Not only application layer, but presentation layer, session layer and transport layer are also implemented in the end system. The layers below are implemented outside the end system, for example, the network layer is implemented on the routers and the physical layer is implemented for the medium.

30. Transport layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Signal transmission

[View Answer](#)

Answer: a

Explanation: Application, Presentation, Session and Transport layer are implemented in the end system. The transport layer handles the process to process delivery of the packet through ports.

31. The functionalities of the presentation layer include _____

- a) Data compression
- b) Data encryption
- c) Data description
- d) All of the mentioned

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Answer: d

Explanation: Some functions of the presentation layer include character-code translation, data conversion, data encryption and decryption, and data translation. It connects the application layer with the layers below converting the human readable text and media to machine readable format and vice-versa.

32. Delimiting and synchronization of data exchange is provided by _____

- a) Application layer
- b) Session layer
- c) Transport layer
- d) Link layer

[View Answer](#)

Answer: b

Explanation: The session layer provides the mechanism for opening, closing and managing a session between end-user application processes. The session layer 5 is responsible for establishing managing synchronizing and terminating sessions. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

33. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is _____

- a) Application layer
- b) Transport layer
- c) Link layer
- d) Session layer

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Answer: d

Explanation: In OSI reference model, the fifth layer is Session layer. Session layer provides the mechanism for opening, closing and managing a session between end-user application processes. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

34. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is _____

- a) Application layer
- b) Transport layer
- c) Link layer
- d) Session layer

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Answer: a

Explanation: In TCP/IP model, the fifth layer is application layer. When data is sent from device A to device B, the 5th layer to receive data at B is application layer. Application layer provides the interface between applications and the network. The user interacts with only this layer.

35. In the OSI model, as a data packet moves from the lower to the upper layers, headers are _____

- a) Added
- b) Removed
- c) Rearranged
- d) Randomized

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Answer: b

Explanation: In OSI reference model, when data packet moves from lower layers to higher layer, headers get removed. Whereas when the data packet moves from higher layer to lower layers, headers are added. These headers contain the essential control information for the protocols used on the specific layer.

36. Physical or logical arrangement of network is _____

- a) Topology
- b) Routing
- c) Networking
- d) Control

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Answer: a

Explanation: Topology in networks is the structure or pattern in which each and every node in the network is connected. There are many topologies in networking like bus, tree, ring, star, mesh, and hybrid topology. There is no particular best topology and a suitable topology can be chosen based on the kind of application of the network .

37. Which network topology requires a central controller or hub?

- a) Star
- b) Mesh
- c) Ring
- d) Bus

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Answer: a

Explanation: In star topology, no computer is connected to another computer directly but all the computers are connected to a central hub. Every message sent from a source computer goes through the hub and the hub then forwards the message only to the intended destination computer.

38. _____ topology requires a multipoint connection.

- a) Star

b) Mesh

c) Ring

d) Bus

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Answer: d

Explanation: In bus topology, there is a single cable to which all the network nodes are connected. So whenever a node tries to send a message or data to other nodes, this data passes through all other nodes in the network through the cable. It is really simple to install but it's not secure enough to be used in most of the computer network applications.

39. Data communication system spanning states, countries, or the whole world is _____

a) LAN

b) WAN

c) MAN

d) PAN

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Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. WANs are used to connect cities, states or even countries. A wireless connection is required to build a WAN. The best example of WAN is the Internet.

40. Data communication system within a building or campus is _____

a) LAN

b) WAN

c) MAN

d) PAN

[View Answer](#)

Answer: a

Explanation: LAN is an abbreviation for Local Area Network. This network interconnects computers in a small area such as schools, offices, residence etc. It is the most versatile kind of data communication system where most of the computer network concepts can be visibly used.

41. WAN stands for _____

a) World area network

b) Wide area network

c) Web area network

d) Web access network

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Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. These are used to connect cities, states or even countries. They can be connected through leased lines or satellites.

UNIT 2: PHYSICAL LAYER

1: The physical layer is concerned with _____

- a) bit-by-bit delivery
- b) process to process delivery
- c) application to application delivery
- d) port to port delivery

Answer: a

Explanation: Physical layer deals with bit to bit delivery in networking. The data unit in the physical layer is bits. Process to process delivery or the port to port delivery is dealt in the transport layer. The various transmission mediums aid the physical layer in performing its functions.

2. Which transmission media provides the highest transmission speed in a network?

- a) coaxial cable
- b) twisted pair cable
- c) optical fiber
- d) electrical cable

Answer: c

Explanation: Fiber optics is considered to have the highest transmission speed among the all mentioned above. The fiber optics transmission runs at 1000Mb/s. It is called as 1000Base-Lx whereas IEEE standard for it is 802.3z. It is popularly used for modern day network connections due to its high transmission rate.

3. Bits can be sent over guided and unguided media as analog signal by _____

- a) digital modulation
- b) amplitude modulation
- c) frequency modulation
- d) phase modulation

Answer: a

Explanation: In analog modulation, digital low frequency baseband signal (digital bit stream) is

transmitted over a higher frequency. Whereas in digital modulation the only difference is that the base band signal is of discrete amplitude level. The bits are represented by only two frequency levels, one for high and one for low.

4. The portion of physical layer that interfaces with the media access control sublayer is called

- a) physical signaling sub layer
- b) physical data sub layer
- c) physical address sub layer
- d) physical transport sub layer

Answer: a

Explanation: The portion of physical layer that interfaces with the medium access control sub layer is Physical Signaling Sub layer. The main function of this layer is character encoding, reception, decoding and performs optional isolation functions. It handles which media connection the signal should be forwarded to physically.

5. The physical layer provides _____

- a) mechanical specifications of electrical connectors and cables
- b) electrical specification of transmission line signal level
- c) specification for IR over optical fiber
- d) all of the mentioned

Answer: d

Explanation: Anything dealing with a network cable or the standards in use – including pins, connectors and the electric current used is dealt in the physical layer (Layer 1). Physical layer deals with bit to bit delivery of the data aided by the various transmission mediums.

6. In asynchronous serial communication the physical layer provides _____

- a) start and stop signaling
- b) flow control
- c) both start & stop signaling and flow control
- d) only start signaling

Answer: c

Explanation: In asynchronous serial communication, the communication is not synchronized by clock signal. Instead of a start and stop signaling and flow control method is followed. Unlike asynchronous serial communication, in synchronous serial communication a clock signal is used for communication, so the start and stop method is not really required.

7. The physical layer is responsible for _____

- a) line coding
- b) channel coding
- c) modulation
- d) all of the mentioned

Answer: d

Explanation: The physical layer is responsible for line coding, channel coding and modulation that is needed for the transmission of the information. The physical configuration including pins, connectors and the electric current used is dealt in the physical layer based on the requirement of the network application.

8. The physical layer translates logical communication requests from the _____ into hardware specific operations.

- a) data link layer
- b) network layer
- c) transport layer
- d) application layer

Answer: a

Explanation: Physical layer accepts data or information from the data link layer and converts it into hardware specific operations so as to transfer the message through physical cables. Some examples of the cables used are optical fiber cables, twisted pair cables and co-axial cables.

9. A single channel is shared by multiple signals by _____

- a) analog modulation
- b) digital modulation
- c) multiplexing
- d) phase modulation

Answer: c

Explanation: In communication and computer networks, the main goal is to share a scarce resource. This is done by multiplexing, where multiple analog or digital signals are combined into one signal over a shared medium. The multiple kinds of signals are designated by the transport layer which is the layer present on a higher level than the physical layer.

10. Wireless transmission of signals can be done via _____

- a) radio waves
- b) microwaves
- c) infrared
- d) all of the mentioned

Answer: d

Explanation: Wireless transmission is carried out by radio waves, microwaves and IR waves. These waves range from 3 KHz to above 300 GHz and are more suitable for wireless transmission. Radio waves can penetrate through walls and are used in radio communications, microwaves and infrared (IR) waves cannot penetrate through walls and are used for satellite communications and device communications respectively.

11. Multiplexing is used in _____

- a) Packet switching
- b) Circuit switching
- c) Data switching
- d) Packet & Circuit switching

Answer: b

Explanation: Circuit switching is a switching method by which one can obtain a physical path between end points. Circuit switching method is also called a connection oriented network. Two nodes must be physically and logically connected to each other to create a circuit switching network.

12. Which multiplexing technique used to transmit digital signals?

- a) FDM
- b) TDM
- c) WDM
- d) FDM & WDM

Answer: b

Explanation: TDM abbreviation for Time Division Multiplexing is a method used for digital signals. Whereas FDM and WDM abbreviation for Frequency Division Multiplexing, and Wavelength Division Multiplexing, are used for analog signals. TDM is used in applications like ISDN (Integrated Services Digital Network) and PSTN (Public Switched Telephone Network).

13. If there are n signal sources of same data rate, then the TDM link has _____ slots.

- a) n
- b) $n/2$
- c) $n*2$
- d) 2^n

Answer: a

Explanation: In TDM, the total unit of time is divided equally among all the signal sources and each and every source has access to the complete channel bandwidth during its allotted time slot. When the time slot of the source is not active, it remains idle and waits for its slot to begin.

14. In TDM, slots are further divided into _____

- a) Seconds
- b) Frames
- c) Packets
- d) Bits

Answer: b

Explanation: TDM is the abbreviation for Time division multiplexing. It is technique for combining several low rate channels to a single high rate channel. For a certain time slot, the several channels could use the maximum bandwidth. Each channel is inactive for a period of time too. Some other multiplexing techniques are Frequency division multiplexing and Phase division multiplexing

15. The sharing of a medium and its link by two or more devices is called _____

- a) Full duplexing
- b) Multiplexing
- c) Microplexing
- d) Duplexing

Answer: b

Explanation: Multiplexing is a method using which one can send multiple signals through a shared medium at the same time. This helps in using less resources and thus saving the cost of sending messages.

16. Which of the following delay is faced by the packet in travelling from one end system to another?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) All of the mentioned

Answer: d

Explanation: When a packet has to travel from one end system to another, it first faces the queuing delay when there are multiple packets which are to be sent, then it faces the transmission delay to convert the packet into bits to be transmitted, and then it faces the propagation delay to propagate the bits through the physical medium.

17. UTP is commonly used in _____

- a) DSL
- b) FTP
- c) HTTP
- d) None of the mentioned

Answer: a. DSL digital subscriber line

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

18. Geostationary satellites _____

- a) Are placed at a fixed point above the earth
- b) Rotate the earth about a fixed axis
- c) Rotate the earth about a varying axis
- d) All of the mentioned

Answer: a

Explanation: They are placed in orbit at 36,000km above Earth's surface.

19. Most packet switches use this principle _____

- a) Stop and wait
- b) Store and forward
- c) Store and wait
- d) Stop and forward

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet. If the entire packet is not received and the time-out period expires, the packet switch will inform the sender to resend the part of packet or the entire packet based on the algorithm being used.

20. What are the Methods to move data through a network of links and switches?

- a) Packet switching and Line switching
- b) Circuit switching and Line switching
- c) Line switching and bit switching

d) Packet switching and Circuit switching

Answer: d

Explanation: Packet switching and Circuit switching are two different types of switching methods used to connect the multiple communicating devices with one another. Packet switching is used in conventional LAN systems and circuit switching is used in telephonic systems.

21. In _____ systems, resources are allocated on demand.

- a) packet switching
- b) circuit switching
- c) line switching
- d) frequency switching

Answer: a

Explanation: In packet switching, the bits are received in out of order and need to be assembled at the receiver end, whereas in the case of Circuit switching, all the bits are received in order. All transmissions may not occur through the same path in case of packet switching.

22. A local telephone network is an example of a _____ network.

- a) Packet switched
- b) Circuit switched
- c) Bit switched
- d) Line switched

Answer: b

Explanation: Circuit switching is connection oriented switching technique, whereas in the case of packet switching, it is connectionless. Circuit switching is implemented in the Physical layer, whereas packet switching is implemented in the Network layer. Internet too is based on the concept of circuit switching.

23. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

- a) IEEE 802.16
- b) IEEE 802.3
- c) IEEE 802.11
- d) IEEE 802.15

Answer: c

Explanation: IEEE 802.11 is a set of media access control and physical layer specification for implementing WLAN computer communication. It was founded in 1987 to begin standardization of spread spectrum WLANs for use in the ISM bands.

24. The price of WLAN hardware is more than 3G telephones and fixed wireless equipment.(True or False)

- a) True
- b) False

Answer: b

Explanation: As, WLAN could be used to provide access for the last 100 meters into homes and businesses. Therefore, the price of WLAN hardware is far below 3G telephones and fixed wireless equipment.

25. Line –of- sight propagation is done by

- a) MEO Satellites
- b) GEO Satellites
- c) LEO Satellites
- d) NONE

Answer: b

1. Which of this is not a guided media?

- a) Fiber optical cable
- b) Coaxial cable
- c) Wireless LAN
- d) Copper wire

[View Answer](#)

Answer: c

Explanation: Wireless LAN is unguided media.

2. UTP is commonly used in _____

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- b) FTP
- c) HTTP
- d) None of the mentioned

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Answer: a

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

3. Coaxial cable consists of _____ concentric copper conductors.

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: Coaxial cable has an inner conductor surrounded by a insulating layer, which is surrounded by a conducting shield. Coaxial cable is used to carry high frequency signals with low losses.

4. Fiber optics posses following properties _____

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In fibre optics the transmission of information is in the form of light or photons. Due to all above properties mentioned in options fibre optics can be submerged in water and are used at more risk environments.

5. If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps) _____

- a) $n \times 39.8$
- b) $n \times 51.8$
- c) $2n \times 51.8$
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The base unit of transmission rates in optical fibre is 51.8 Mbits/s. So an optical carrier represented as OC-n has $n \times 51.8$ Mbits/s transmission speed. For eg. OC-3 has 3×51.8 Mbits/s speed.

6. Terrestrial radio channels are broadly classified into _____ groups.

- a) 2
- b) 3
- c) 4

d) 1

[View Answer](#)

Answer: b

Explanation: The three types are those that operate over very short distance, those that operate in local areas, those that operate in the wide area.

7. Radio channels are attractive medium because _____

- a) Can penetrate walls
- b) Connectivity can be given to mobile user
- c) Can carry signals for long distance
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Radio channels can penetrate walls, can be used to provide connectivity to mobile users and can also carry signals for long distances.

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[View Answer](#)

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- b) amplitude modulation
- c) frequency modulation
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[View Answer](#)

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- a) physical signalling sublayer
- b) physical data sublayer
- c) physical address sublayer
- d) physical transport sublayer

[View Answer](#)

Answer: a

Explanation: The portion of physical layer that interfaces with the medium access control sublayer is Physical Signaling Sublayer. The main function of this layer is character encoding, reception, decoding and performs optional isolation functions. It handles which media connection the signal should be forwarded to physically.

5. The physical layer provides _____

- a) mechanical specifications of electrical connectors and cables
- b) electrical specification of transmission line signal level
- c) specification for IR over optical fiber
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Anything dealing with a network cable or the standards in use – including pins, connectors and the electric current used is dealt in the physical layer (Layer 1). Physical layer deals

with bit to bit delivery of the data aided by the various transmission mediums.

6. In asynchronous serial communication the physical layer provides _____

- a) start and stop signalling
- b) flow control
- c) both start & stop signalling and flow control
- d) only start signalling

[View Answer](#)

Answer: c

Explanation: In asynchronous serial communication, the communication is not synchronized by clock signal. Instead of a start and stop signaling and flow control method is followed. Unlike asynchronous serial communication, in synchronous serial communication a clock signal is used for communication, so the start and stop method is not really required.

7. The physical layer is responsible for _____

- a) line coding
- b) channel coding
- c) modulation
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The physical layer is responsible for line coding, channel coding and modulation that is needed for the transmission of the information. The physical configuration including pins, connectors and the electric current used is dealt in the physical layer based on the requirement of the network application.

8. The physical layer translates logical communication requests from the _____ into hardware specific operations.

- a) data link layer
- b) network layer
- c) trasnport layer
- d) application layer

[View Answer](#)

Answer: a

Explanation: Physical layer accepts data or information from the data link layer and converts it into hardware specific operations so as to transfer the message through physical cables. Some examples of the cables used are optical fiber cables, twisted pair cables and co-axial cables.

9. A single channel is shared by multiple signals by _____

- a) analog modulation
- b) digital modulation
- c) multiplexing

d) phase modulation

[View Answer](#)

Answer: c

Explanation: In communication and computer networks, the main goal is to share a scarce resource. This is done by multiplexing, where multiple analog or digital signals are combined into one signal over a shared medium. The multiple kinds of signals are designated by the transport layer which is the layer present on a higher level than the physical layer.

10. Wireless transmission of signals can be done via _____

- a) radio waves
- b) microwaves
- c) infrared
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Wireless transmission is carried out by radio waves, microwaves and IR waves. These waves range from 3 Khz to above 300 Ghz and are more suitable for wireless transmission. Radio waves can penetrate through walls and are used in radio communications, microwaves and infrared (IR) waves cannot penetrate through walls and are used for satellite communications and device communications respectively.

UNIT 3: DATA LINK LAYER

1. The data link layer takes the packets from _____ and encapsulates them into frames for transmission.

- a) network layer
- b) physical layer
- c) transport layer
- d) application layer

Answer: a

Explanation: In computer networks, the data from application layer is sent to transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits. Error control and flow control data is inserted in the frames at the data link layer.

2. Which of the following tasks is not done by data link layer?

- a) framing
- b) error control
- c) flow control
- d) channel coding

Answer: d

Explanation: Channel coding is the function of physical layer. Data link layer mainly deals with framing, error control and flow control. Data link layer is the layer where the packets are encapsulated into frames.

3. Which sublayer of the data link layer performs data link functions that depend upon the type of medium?

- a) logical link control sublayer
- b) media access control sublayer
- c) network interface control sublayer
- d) error control sublayer

Answer: b

Explanation: Media access control (MAC) deals with transmission of data packets to and from the network-interface card, and also to and from another remotely shared channel. The MAC sublayer also prevents collision using protocols like CSMA/CD.

4. Header of a frame generally contains _____

- a) synchronization bytes
- b) addresses
- c) frame identifier
- d) all of the mentioned

Answer: d

Explanation: In a frame, the header is a part of the data that contains all the required information about the transmission of the file. It contains information like synchronization bytes, addresses, frame identifier etc. It also contains error control information for reducing the errors in the transmitted frames.

5. Automatic repeat request error management mechanism is provided by _____

- a) logical link control sublayer
- b) media access control sublayer
- c) network interface control sublayer
- d) application access control sublayer

Answer: a

Explanation: The logical link control is a sublayer of data link layer whose main function is to manage traffic, flow and error control. The automatic repeat request error management mechanism is provided by the LLC when an error is found in the received frame at the receiver's end to inform the sender to re-send the frame.

6. When 2 or more bits in a data unit has been changed during the transmission, the error is called _____

- a) random error
- b) burst error
- c) inverted error
- d) double error

Answer: b

Explanation: When a single bit error occurs in a data, it is called single bit error. When more than a single bit of data is corrupted or has error, it is called burst error. If a single bit error occurs, the bit can be simply repaired by inverting it, but in case of a burst error, the sender has to send the frame again.

7. CRC stands for _____

- a) cyclic redundancy check
- b) code repeat check
- c) code redundancy check
- d) cyclic repeat check

Answer: a

Explanation: Cyclic redundancy check is a code that is added to a data which helps us to identify any error that occurred during the transmission of the data. CRC is only able to detect errors, not correct them. CRC is inserted in the frame trailer.

8. Which of the following is a data link protocol?

- a) Ethernet
- b) point to point protocol
- c) HDLC
- d) all of the mentioned

Answer: d

Explanation: There are many data link layer protocols. Some of them are SDLC (synchronous data link protocol), HDLC (High level data link control), SLIP (serial line interface protocol), PPP (Point to point protocol) etc. These protocols are used to provide the logical link control function of the Data Link Layer.

9. Which of the following is the multiple access protocol for channel access control?

- a) CSMA/CD
- b) CSMA/CA
- c) Both CSMA/CD & CSMA/CA
- d) HDLC

Answer: c

Explanation: In CSMA/CD, it deals with detection of collision after collision has occurred, whereas CSMA/CA deals with preventing collision. CSMA/CD is abbreviation for Carrier Sensing Multiple Access/Collision detection. CSMA/CA is abbreviation for Carrier Sensing Multiple Access/Collision Avoidance. These protocols are used for efficient multiple channel access.

10. Which among the following represents the objectives/requirements of Data Link Layer?

- a. Frame Synchronization
- b. Error & Flow Control
- c. Both a & b
- d. None of the above

ANSWER: c. Both a & b

11. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?

- a. only when no error occurs at the transmission level
- b. when retransmission of old packet in a novel frame is necessary
- c. only when station B receives frame with errors
- d. all of the above

ANSWER: a. only when no error occurs at the transmission level

12. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?

- a. Go-Back-N ARQ
- b. Selective Repeat ARQ
- c. Stop-and-Wait ARQ
- d. All of the above

ANSWER: b. Selective Repeat ARQ

13. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?

- a. Control Variables
- b. Sender Sliding Window
- c. Receiver Sliding Window
- d. Resending of frames

ANSWER: b. Sender Sliding Window

14. is prevalent in LANs, we need a way to define the end of the frame and the beginning of the next

- A. Standard Size Framing
- B. Fixed Size Framing
- C. Variable Size Framing
- D. Constant Size Framing

Answer : C. Variable Size Framing

15. In there is no need for defining the boundaries of the frames; the size itself can be used as a delimiter.

- A. Standard Size Framing
- B. Fixed Size Framing
- C. Variable Size Framing
- D. Constant Size Framing

Answer : B. Fixed Size Framing

16. A point-to-point protocol over Ethernet is a network protocol for.....

- A. encapsulating PPP frames inside Ethernet frames
- B. encapsulating Ethernet frames inside PPP frames
- C. for security of Ethernet frames
- D. for security of PPP frames

ANSWER: a. encapsulating PPP frames inside Ethernet frames

17. High speed ethernet works on

- a) coaxial cable
- b) twisted pair cable
- c) optical fiber
- d) none of the mentioned

ANSWER: c) optical fiber

18. What is the access point (AP) in wireless LAN?

- a) device that allows wireless devices to connect to a wired network
- b) wireless devices itself
- c) both (a) and (b)
- d) none of the mentioned

ANSWER: a. device that allows wireless devices to connect to a wired network

19. In wireless ad-hoc network

- a) access point is not required
- b) access point is must
- c) nodes are not required
- d) none of the mentioned

ANSWER: a. access point is not required

20.Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA
- c) ALOHA
- d) none of the mentioned

ANSWER: a. CSMA/CA

21.In wireless distribution system

- a) multiple access point are inter-connected with each other
- b) there is no access point
- c) only one access point exists
- d) none of the mentioned

ANSWER: a. multiple access point are inter-connected with each other

22.A wireless network interface controller can work in

- a) infrastructure mode
- b) ad-hoc mode
- c) both (a) and (b)
- d) none of the mentioned

ANSWER: a. both (a) and (b)

23. In wireless network an extended service set is a set of

- a) connected basic service sets
- b) all stations

- c) all access points
- d) None of the mentioned.

ANSWER: a. connected basic service sets

24. Mostly _____ is used in wireless LAN.

- a) time division multiplexing
- b) orthogonal frequency division multiplexing
- c) space division multiplexing
- d) none of the mentioned

ANSWER: b . orthogonal frequency division multiplexing

25. Which one of the following event is not possible in wireless LAN.

- a) collision detection
- b) Acknowledgement of data frames
- c) multi-mode data transmission
- d) none of the mentioned

ANSWER: a. Collision detection

UNIT 4: Network Layer and Transport Layer

QUESTION 1: The size of an IP address in IPv6 is _____

- a) 4 bytes
- b) 128 bits
- c) 8 bytes
- d) 100 bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long.

2. The header length of an IPv6 datagram is _____.

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram.

3. In Address Resolution Protocol (ARP), Of Packet is encapsulated directly in to a

- a) Data link Integer
- b) Network Frame
- c) Network Station
- d) Data link Frame

[View Answer](#)

Answer: d

4. If an Address Resolution Protocol (ARP), request is broadcast an ARP reply is

- a. universal
- b. unicast
- c. multicast
- d. generated locally

answer: b. unicast

5. ICMP is primarily used for _____

- a) error and diagnostic functions
- b) addressing
- c) forwarding

d) routing

Answer: a

6. IGMP stands for

- a) Internet Group Management Package
- b) Internet Group Management Path
- c) Internet Group Management Protocol
- d) Internet Group Management Ping

Answer: c

7. In _____ we try to avoid traffic congestion.

- a) congestion control
- b) quality of service
- c) either (a) or (b)
- d) both (a) or (b)

Answer: a

8. In _____ we try to create an appropriate environment for the traffic.

- a) congestion control
- b) quality of service
- c) either (a) or (b)
- d) both (a) or (b)

Answer: b

9. Which of the following routing algorithms can be used for network layer design?

- a) shortest path algorithm
- b) distance vector routing
- c) link state routing
- d) all of the mentioned

Answer: d

10. Which of the following are transport layer protocols used in networking?

- a) TCP and FTP
- b) UDP and HTTP
- c) TCP and UDP
- d) HTTP and FTP

Answer: c

11. Transport layer protocols deals with _____

- a) application to application communication
- b) process to process communication
- c) node to node communication

d) man to man communication

Answer: b

12. What is the main advantage of UDP?

- a) More overload
- b) Reliable
- c) Low overhead
- d) Fast

Answer: c

13. UDP is called a _____ transport protocol.

- a) connectionless, reliable
- b) connection-oriented, unreliable
- c) connectionless, unreliable
- d) none of the above

Answer: c

14. One of the responsibilities of the transport layer protocol is to create a _____ communication.

- a) host -to-host
- b) process-to-process
- c) node-to-node
- d) none of the above

Answer: b

15. DHCP (dynamic host configuration protocol) provides _____ to the client.

- a) IP address
- b) MAC address
- c) Url
- d) None of the mentioned

Answer: a

16. DHCP is used for _____

- a) IPv6
- b) IPv4
- c) Both IPv6 and IPv4
- d) None of the mentioned

Answer: c

17. In link state routing after the construction of link state packets new routes are computed using _____

- a) Bellman Ford algorithm
- b) DES algorithm
- c) Dijkstra's algorithm
- d) Leaky bucket algorithm

Answer: c

18. Count-to -Infinity problem occurs in _____

- a) distance vector routing
- b) short path first

- c) link state routing
- d) hierarchical routing

Answer: a

19. In which routing method do all the routers have a common database?

- a) distance vector
- b) link vector
- c) shortest path
- d) link state

Answer: d

20. Link state packets are built in _____

- a) shortest path first
- b) distance vector
- c) link state routing
- d) hierarchical routing

Answer: b

21. 10. Which of the following is a transport layer protocol?

- a) stream control transmission protocol
- b) internet control message protocol
- c) neighbor discovery protocol
- d) dynamic host configuration protocol

Answer: a

Explanation: The Stream Control Transmission Protocol (SCTP) is a transport layer protocol used in networking system where streams of data are to be continuously transmitted between two connected network nodes. Some of the other transport layer protocols are RDP, RUDP, TCP, DCCP, UDP etc.

22. A _____ is a TCP name for a transport service access point.

- a) port

- b) pipe
- c) node
- d) protocol

Answer: a

Explanation: Just as the IP address identifies the computer, the network port identifies the application or service running on the computer. A port number is 16 bits. The combination of IP address preceded with the port number is called the socket address.

23. Transmission control protocol _____

- a) is a connection-oriented protocol
- b) uses a three way handshake to establish a connection
- c) receives data from application as a single stream
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: TCP provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network. Major internet applications like www, email, file transfer etc rely on TCP. TCP is connection oriented and it is optimized for accurate delivery rather than timely delivery

24. Datagram networks mainly refers to _____

- a) Connection oriented networks
- b) Connection less networks
- c) Telephone networks
- d) Internetwork

[View Answer](#)

Answer: b

Explanation: The switch does not keep the information about the connection state, hence it is connection less. There is no need for establishing a handshake to begin the transmission in such networks.

25. During datagram switching, the packets are placed in _____ to wait until the given transmission line becomes available.

- a) Stack

- b) Queue
- c) Hash
- d) Routing table

[View Answer](#)

Answer: b

Explanation: When there are too many packets to be transmitted and the transmission line gets blocked while transmitting some packets, the remaining packets are stored in queue during delay and are served as first in first out. The delay is called as queuing delay.

1. The network layer is concerned with _____ of data.

- a) bits
- b) frames
- c) packets
- d) bytes

[View Answer](#)

Answer: c

Explanation: In computer networks, the data from the application layer is sent to the transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits.

2. Which one of the following is not a function of network layer?

- a) routing
- b) inter-networking
- c) congestion control
- d) error control

[View Answer](#)

Answer: d

Explanation: In the OSI model, network layer is the third layer and it provides data routing paths for network communications. Error control is a function of the data link layer and the transport layer.

3. A 4 byte IP address consists of _____

- a) only network address
- b) only host address
- c) network address & host address
- d) network address & MAC address

[View Answer](#)

Answer: c

Explanation: An ip address which is 32 bits long, that means it is of 4 bytes and is composed of a network and host portion and it depends on address class. The size of the host address and network address depends upon the class of the address in classful IP addressing.

4. In virtual circuit network each packet contains _____

- a) full source and destination address
- b) a short VC number
- c) only source address
- d) only destination address

[View Answer](#)

Answer: b

Explanation: A short VC number also called as VCID (virtual circuit identifier) is a type of identifier which is used to distinguish between several virtual circuits in a connection oriented circuit switched network. Each virtual circuit is used to transfer data over a larger packet switched network.

5. Which of the following routing algorithms can be used for network layer design?

- a) shortest path algorithm
- b) distance vector routing
- c) link state routing
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The routing algorithm is what decides where a packet should go next. There are several routing techniques like shortest path algorithm, static and dynamic routing, decentralized routing, distance vector routing, link state routing, Hierarchical routing etc. The routing algorithms go hand in hand with the operations of all the routers in the networks. The routers are the main participants in these algorithms.

6. Which of the following is not correct in relation to multi-destination routing?

- a) is same as broadcast routing
- b) contains the list of all destinations
- c) data is not sent by packets
- d) there are multiple receivers

[View Answer](#)

Answer: c

Explanation: In multi-destination routing, there is more than one receiver and the route for each destination which is contained in a list of destinations is to be found by the routing algorithm. Multi-

destination routing is also used in broadcasting.

7. A subset of a network that includes all the routers but contains no loops is called _____

- a) spanning tree
- b) spider structure
- c) spider tree
- d) special tree

[View Answer](#)

Answer: a

Explanation: Spanning tree protocol (STP) is a network protocol that creates a loop free logical topology for ethernet networks. It is a layer 2 protocol that runs on bridges and switches. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network.

8. Which one of the following algorithm is not used for congestion control?

- a) traffic aware routing
- b) admission control
- c) load shedding
- d) routing information protocol

[View Answer](#)

Answer: d

Explanation: The Routing Information Protocol (RIP) is used by the network layer for the function of dynamic routing. Congestion control focuses on the flow of the traffic in the network and uses algorithms like traffic aware routing, admission control and load shedding to deal with congestion.

9. The network layer protocol for internet is _____

- a) ethernet
- b) internet protocol
- c) hypertext transfer protocol
- d) file transfer protocol

[View Answer](#)

Answer: b

Explanation: There are several protocols used in Network layer. Some of them are IP, ICMP, CLNP, ARP, IPX, HRSP etc. Hypertext transfer protocol is for application layer and ethernet protocol is for data link layer.

10. ICMP is primarily used for _____

- a) error and diagnostic functions
- b) addressing
- c) forwarding
- d) routing

[View Answer](#)

Answer: a

Explanation: ICMP abbreviation for Internet Control Message Protocol is used by networking devices to send error messages and operational information indicating a host or router cannot be reached. ICMP operates over the IP packet to provide error reporting functionality as IP by itself cannot report errors.

1. Transport layer aggregates data from different applications into a single stream before passing it to

- a) network layer
- b) data link layer
- c) application layer
- d) physical layer

[View Answer](#)

Answer: a

Explanation: The flow of data in the OSI model flows in following manner Application -> Presentation -> Session -> Transport -> Network -> Data Link -> Physical. Each and every layer has its own set of functions and protocols to ensure efficient network performance.

2. Which of the following are transport layer protocols used in networking?

- a) TCP and FTP
- b) UDP and HTTP
- c) TCP and UDP
- d) HTTP and FTP

[View Answer](#)

Answer: c

Explanation: Both TCP and UDP are transport layer protocol in networking. TCP is an abbreviation for Transmission Control Protocol and UDP is an abbreviation for User Datagram Protocol. TCP is connection oriented whereas UDP is connectionless.

3. User datagram protocol is called connectionless because _____

- a) all UDP packets are treated independently by transport layer
- b) it sends data as a stream of related packets

- c) it is received in the same order as sent order
- d) it sends data very quickly

[View Answer](#)

Answer: a

Explanation: UDP is an alternative for TCP and it is used for those purposes where speed matters most whereas loss of data is not a problem. UDP is connectionless whereas TCP is connection oriented.

4. Transmission control protocol _____

- a) is a connection-oriented protocol
- b) uses a three way handshake to establish a connection
- c) receives data from application as a single stream
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: TCP provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network. Major internet applications like www, email, file transfer etc rely on TCP. TCP is connection oriented and it is optimized for accurate delivery rather than timely delivery.

5. An endpoint of an inter-process communication flow across a computer network is called _____

- a) socket
- b) pipe
- c) port
- d) machine

[View Answer](#)

Answer: a

Explanation: Socket is one end point in a two way communication link in the network. TCP layer can identify the application that data is destined to be sent by using the port number that is bound to socket.

6. Socket-style API for windows is called _____

- a) wsock
- b) winsock
- c) wins
- d) sockwi

[View Answer](#)

Answer: b

Explanation: Winsock is a programming interface which deals with input output requests for internet applications in windows OS. It defines how windows network software should access network services.

7. Which one of the following is a version of UDP with congestion control?

- a) datagram congestion control protocol
- b) stream control transmission protocol
- c) structured stream transport
- d) user congestion control protocol

[View Answer](#)

Answer: a

Explanation: The datagram congestion control is a transport layer protocol which deals with reliable connection setup, teardown, congestion control, explicit congestion notification, and feature negotiation. It is used in modern day systems where there are really high chances of congestion. The protocol was last updated in the year 2008.

8. A _____ is a TCP name for a transport service access point.

- a) port
- b) pipe
- c) node
- d) protocol

[View Answer](#)

Answer: a

Explanation: Just as the IP address identifies the computer, the network port identifies the application or service running on the computer. A port number is 16 bits. The combination of IP address preceded with the port number is called the socket address.

9. Transport layer protocols deals with _____

- a) application to application communication
- b) process to process communication
- c) node to node communication
- d) man to man communication

[View Answer](#)

Answer: b

Explanation: Transport layer is 4th layer in TCP/IP model and OSI reference model. It deals with logical communication between process. It is responsible for delivering a message between network host.

10. Which of the following is a transport layer protocol?

- a) stream control transmission protocol
- b) internet control message protocol
- c) neighbor discovery protocol
- d) dynamic host configuration protocol

[View Answer](#)

Answer: a

Explanation: The Stream Control Transmission Protocol (SCTP) is a transport layer protocol used in networking system where streams of data are to be continuously transmitted between two connected network nodes. Some of the other transport layer protocols are RDP, RUDP, TCP, DCCP, UDP etc.

Short Question Answer from Computer Network

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Important MCQ on Computer Network

Q.1> Modulator and demodulator as combine is known as –

- A: Modulus
- B: Modem
- C: Mod switch
- D: Mod access

Answer

Modem

Q.2> Which of the following network device has the slowest type of connection?

- A: DSL
- B: Router
- C: Bridges
- D: Dial-up modems

Answer

Dial-up modems

Q.3> Which of the following is an example of Personal Area Networking?

- A: Bluetooth
- B: WAN
- C: WLAN
- D: All of the above

Answer

Bluetooth

Q.4> A place where there is a field of signal through which you can access WiFi internet is called –

- A: Wi-Fi Hotspots
- B: Wi-Fi Internet

- C: Wi-Fi Zone
- D: Wi-Fi Range

Answer

WiFi Hotspots

Q.5> Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?

- A: Star
- B: Router
- C: Bus
- D: LAN

Answer

Star

Q.6> Which network is able to connect to each computer through a common central line?

- A: Bus
- B: Star
- C: router
- D: WAN

Answer

Bus

Q.7> Which topology allow to connect computers including server in a ring?

- A: Star
- B: Tree
- C: Ring
- D: LAN

Answer

Ring

Q.8> How many different type of server exist? **

- A: Only one
- B: Two
- C: Three
- D: Four

Answer

Four

Q.9> Which type of network is used for small geographical area such as in a one building?

- A: WLAN
- B: MAN
- C: LAN
- D: WAN

Answer

LAN

Q.10> Which networking device connect one LAN to other LAN using same protocol?

- A: Router
- B: Switch
- C: Bridge
- D: Modem

Answer

Switch

NOTE 1 There are four type of computer network servers. They are –

1. File server
2. Application server
3. Printer server
4. Proxy server

NOTE 2 Similarly there are also four Local area network technology such as star, bus, tree and ring.

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50 MCQ's for CN Lab

Multiple Choice Questions of Computer Networking

1.Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

2.What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

3.How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

4.DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

5.IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

6.DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

7.What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

8.ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

9.What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

10.Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)

- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

Multiple Choice Questions of Computer Networking

Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

_provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C
- D. Class D

Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16
- D. Network bit – 12, Host bit – 14

The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

How many layers are in the TCP/IP model?

- A. 4 layers
- B. 5 layers
- C. 6 layers
- D. 7 layers

Which of the following layer of OSI model also called end-to-end layer?

- A. Presentation layer
 - B. Network layer
 - C. Session layer
 - D. Transport layer
-

Multiple Choice Questions of Computer Networking

3-1. Why IP Protocol is considered as unreliable?

- A. A packet may be lost
- B. Packets may arrive out of order
- C. Duplicate packets may be generated
- D. All of the above

3-2. What is the minimum header size of an IP packet?

- A. 16 bytes
- B. 10 bytes
- C. 20 bytes
- D. 32 bytes

3-3. Which of following provides reliable communication?

- A. TCP
- B. IP
- C. UDP
- D. All of the above

3-4. What is the address size of IPv6 ?

- A. 32 bit
- B. 64 bit
- C. 128 bit
- D. 256 bit

3-5. What is the size of Network bits & Host bits of Class A of IP address?

- A. Network bits 7, Host bits 24
- B. Network bits 8, Host bits 24
- C. Network bits 7, Host bits 23
- D. Network bits 8, Host bits 23

3-6. What does Router do in a network?

- A. Forwards a packet to all outgoing links
- B. Forwards a packet to the next free outgoing link
- C. Determines on which outing link a packet is to be forwarded
- D. Forwards a packet to all outgoing links except the originated link

3-7. The Internet is an example of

- A. Cell switched network
- B. circuit switched network
- C. Packet switched network
- D. All of above

3-8. What does protocol defines?

- A. Protocol defines what data is communicated.
- B. Protocol defines how data is communicated.
- C. Protocol defines when data is communicated.
- D. All of above

3-9. What is the uses of subnetting?

- A. It divides one large network into several smaller ones
- B. It divides network into network classes
- C. It speeds up the speed of network
- D. None of above

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- A. Physical layer
 - B. Data link layer
 - C. Network layer
 - D. Transport layer
-

Multiple Choice Questions of Computer Networking

4-1. What is the benefit of the Networking?

- A. File Sharing
- B. Easier access to Resources
- C. Easier Backups
- D. All of the Above

4-2. Which of the following is not the Networking Devices?

- A. Gateways
- B. Linux
- C. Routers
- D. Firewalls

4-3. What is the size of MAC Address?

- A. 16-bits
- B. 32-bits
- C. 48-bits
- D. 64-bits

4-4. Which of the following can be Software?

- A. Routers
- B. Firewalls
- C. Gateway
- D. Modems

4-5. What is the use of Ping command?

- A. To test a device on the network is reachable
- B. To test a hard disk fault
- C. To test a bug in a Application
- D. To test a Printer Quality

4-6. MAC Address is the example of

- A. Transport Layer
- B. Data Link Layer
- C. Application Layer
- D. Physical Layer

4-7. Routing tables of a router keeps track of

- A. MAC Address Assignments
- B. Port Assignments to network devices
- C. Distribute IP address to network devices
- D. Routes to use for forwarding data to its destination

4-8. Layer-2 Switch is also called

- A. Multiport Hub
- B. Multiport Switch
- C. Multiport Bridge
- D. Multiport NIC

4-9. Difference between T568A and T568B is

- A. Difference in wire color
- B. Difference in number of wires
- C. Just different length of wires
- D. Just different manufacturer standards

4-10. The meaning of Straight-through Cable is

- A. Four wire pairs connect to the same pin on each end
- B. The cable Which Directly connects Computer to Computer
- C. Four wire pairs not twisted with each other
- D. The cable which is not twisted

Multiple Choice Questions of Computer Networking

1. What is the size of Source and Destination IP address in IP header?

- A. 4 bits
- B. 8 bits
- C. 16 bits
- D. 32 bits

2.Which of the following is reliable communication?

- A. TCP
- B. IP
- C. UDP
- D. All of them

3. What is the typical range of Ephemeral ports?

- A. 1 to 80
- B. 1 to 1024
- C. 80 to 8080
- D. 1024 to 65535

4. What is the purpose of the PSH flag in the TCP header?

- A. Typically used to indicate end of message
- B. Typically used to indicate beginning of message
- C. Typically used to push the message
- D. Typically used to indicate stop the message

5.What is the natural mask for a class C Network?

- A. 255.255.255.1
- B. 255.255.255.0
- C. 255.255.255.254
- D. 255.255.255.255

6.What is the usable size of Network bits in Class B of IP address?

- A. 04
- B. 08
- C. 14
- D. 16

7.In which type of RAID, data is mirrored between two disks.

- A. RAID 0
- B. RAID 1
- C. RAID 2
- D. RAID 3

8.What do you mean by broadcasting in Networking?

- A. It means addressing a packet to all machine
- B. It means addressing a packet to some machine
- C. It means addressing a packet to a particular machine
- D. It means addressing a packet to except a particular machine

9.Which of the following is/are Protocols of Application?

- A. FTP
- B. DNS
- C. Telnet
- D. All of above

10.Which of the following protocol is/are defined in Transport layer?

- A. FTP
 - B. TCP
 - C. UDP
 - D. B & C
-

All the Multiple Choice Question and Answer (MCQs) have been compiled from the books of Data Communication and Networking by the well known author behrouz A forouzan.

This Data Communication and Networking – **Network Security** multiple choice questions and answers (MCQ) PDF covers the below lists of topics.

1. Network Security Multiple Choice Question and Answer.

Practice now to sharpen your concept.

1. Message _____ means that the sender and the receiver expect privacy

- A. confidentiality
- B. integrity
- C. authentication
- D. none of the above

2. Message _____ means that the data must arrive at the receiver exactly as sent

- A. confidentiality
- B. integrity
- C. authentication
- D. none of the above

3. Message _____ means that the receiver is ensured that the message is coming from the intended sender, not an imposter

- A. confidentiality

- B. integrity
- C. authentication
- D. none of the above

4. _____ means that a sender must not be able to deny sending a message that he sent.

- A. Confidentiality
- B. Integrity
- C. Authentication
- D. Nonrepudiation

5. _____ means to prove the identity of the entity that tries to access the system's resources.

- A. Message authentication
- B. Entity authentication
- C. Message confidentiality
- D. none of the above

6. A(n) _____ can be used to preserve the integrity of a document or a message.

- A. message digest
- B. message summary
- C. encrypted message
- D. none of the above

7. A(n) _____ function creates a message digest out of a message.

- A. encryption
- B. decryption
- C. hash
- D. none of the above

8. A hash function must meet _____ criteria.

- A. two
- B. three
- C. four
- D. none of the above

9. A _____ message digest is used as an MDC.

- A. keyless
- B. keyed
- C. either (a) or (b)
- D. neither (a) nor (b)

10. To authenticate the data origin, one needs a(n) _____.

- A. MDC
- B. MAC
- C. either (a) or (b)
- D. neither (a) nor (b)

Answer key for MCQ SET- 1

Q-1	Correct Answer :confidentiality
Q-2	Correct Answer :integrity
Q-3	Correct Answer :authentication
Q-4	Correct Answer :Nonrepudiation
Q-5	Correct Answer :Entity authentication
Q-6	Correct Answer :message digest
Q-7	Correct Answer :hash
Q-8	Correct Answer :three

Q-9	Correct Answer :keyless
Q-10	Correct Answer :MAC

Network Security multiple choice questions and answers MCQ Set-2

1. A _____ signature is included in the document; a _____ signature is a separate entity.

- A. conventional; digital
- B. digital; digital
- C. either (a) or (b)
- D. neither (a) nor (b)

2. Digital signature provides _____

- A. authentication
- B. nonrepudiation
- C. both (a) and (b)
- D. neither (a) nor (b)

3. Digital signature cannot provide _____ for the message

- A. integrity
- B. confidentiality
- C. nonrepudiation
- D. authentication

4. If _____ is needed, a cryptosystem must be applied over the scheme

- A. integrity
- B. confidentiality
- C. nonrepudiation

D. authentication

5. A digital signature needs a(n) _____ system

- A. symmetric-key
- B. asymmetric-key
- C. either (a) or (b)
- D. neither (a) nor (b)

6. A witness used in entity authentication is _____

- A. something known
- B. something possessed
- C. something inherent
- D. all of the above

7. In _____, a claimant proves her identity to the verifier by using one of the three kinds of witnesses

- A. message authentication
- B. entity authentication
- C. message confidentiality
- D. message integrity

8. Password-based authentication can be divided into two broad categories: _____ and _____

- A. fixed; variable
- B. time-stamped; fixed
- C. fixed; one-time
- D. none of the above

9. In _____ authentication, the claimant proves that she knows a secret without actually sending it

- A. password-based
- B. challenge-response
- C. either (a) or (b)
- D. neither (a) nor (b)

10. Challenge-response authentication can be done using _____

- A. symmetric-key ciphers
- B. asymmetric-key ciphers
- C. keyed-hash functions
- D. all of the above

Answer key for MCQ SET- 2

Q-1	Correct Answer :conventional; digital
Q-2	Correct Answer :both (a) and (b)
Q-3	Correct Answer :confidentiality
Q-4	Correct Answer :confidentiality
Q-5	Correct Answer :asymmetric-key
Q-6	Correct Answer :all of the above
Q-7	Correct Answer :entity authentication
Q-8	Correct Answer :fixed; one-time
Q-9	Correct Answer :challenge-response
Q-10	Correct Answer :all of the above

Network Security multiple choice questions and answers MCQ Set-3

1. A(n) _____ is a trusted third party that assigns a symmetric key to two parties.

- A. KDC
- B. CA
- C. KDD
- D. none of the above

2. A(n)_____ creates a secret key only between a member and the center.

- A. CA
- B. KDC
- C. KDD
- D. none of the above

3. The secret key between members needs to be created as a _____ key when two members contact KDC.

- A. public
- B. session
- C. complimentary
- D. none of the above

4. _____ is a popular session key creator protocol that requires an authentication server and a ticket-granting server.

- A. KDC
- B. Kerberos
- C. CA
- D. none of the above

5. A(n) _____ is a federal or state organization that binds a public key to an entity and issues a certificate.

- A. KDC
- B. Kerberos
- C. CA
- D. none of the above

6. A(n) _____ is a hierarchical system that answers queries about key certification.

- A. KDC
- B. PKI
- C. CA
- D. none of the above

7. The _____ criterion states that it must be extremely difficult or impossible to create the message if the message digest is given.

- A. one-wayness
- B. weak-collision-resistance
- C. strong-collision-resistance
- D. none of the above

8. The _____ criterion ensures that a message cannot easily be forged.

- A. one-wayness
- B. weak-collision-resistance
- C. strong-collision-resistance
- D. none of the above

9. The _____ criterion ensures that we cannot find two messages that hash to the same digest

- A. one-wayness
- B. weak-collision-resistance
- C. strong-collision-resistance
- D. none of the above

Answer key for MCQ SET- 3	
Q-1	Correct Answer :KDC
Q-2	Correct Answer :KDC
Q-3	Correct Answer :session
Q-4	Correct Answer :Kerberos
Q-5	Correct Answer :CA
Q-6	Correct Answer :CA
Q-7	Correct Answer :one-wayness
Q-8	Correct Answer :weak-collision-resistance
Q-09	Correct Answer :strong-collision-resistance

Multiple Choice Questions of Computer Networking

1-1 Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

1-2 What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

1-3 How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

1-4 DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

1-5 IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

1-6 DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

1-7 What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

1-8 ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

1-9 What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

1-10 Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)
- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

[Click Here for Answers](#)

1 – D / 2 – C / 3 – D / 4 – B / 5 – C / 6 – C / 7 – A / 8 – D / 9 – A / 10 – B

Multiple Choice Questions of Computer Networking

2-1 Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

2-2 Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

2-3 _____ provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

2-4 Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

2-5 Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C
- D. Class D

2-6 Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16
- D. Network bit – 12, Host bit – 14

2-7 The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

2-8 How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

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-

[Click Here for Answers](#)

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Multiple Choice Questions of Computer Networking

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- A. A packet may be lost
- B. Packets may arrive out of order
- C. Duplicate packets may be generated
- D. All of the above

3-2. What is the minimum header size of an IP packet?

- A. 16 bytes
- B. 10 bytes
- C. 20 bytes
- D. 32 bytes

3-3. Which of following provides reliable communication?

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- B. 64 bit
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[Click Here for Answers](#)

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Multiple Choice Questions of Computer Networking

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- B. Linux
- C. Routers
- D. Firewalls

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- B. 32-bits
- C. 48-bits
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Click Here for Answers

1 – D / 2 – B / 3 – C / 4 – B / 5 – A / 6 – B / 7 – D / 8 – C / 9 – D / 10 – A

Multiple Choice Questions of Computer Networking

5-1 Which of the following is not the External Security Threats?

- A. Front-door Threats
- B. Back-door Threats
- C. Underground Threats
- D. Denial of Service (DoS)

5-2 What is the Demilitarized Zone?

- A. The area between firewall & connection to an external network
- B. The area between ISP to Military area
- C. The area surrounded by secured servers
- D. The area surrounded by the Military

5-3 What is the full form of RAID ?

- A. Redundant Array of Independent Disks
- B. Redundant Array of Important Disks
- C. Random Access of Independent Disks
- D. Random Access of Important Disks

5-4 What is the maximum header size of an IP packet?

- A. 32 bytes
- B. 64 bytes
- C. 30 bytes
- D. 60 bytes

5-5 What is the size of Host bits in Class B of IP address?

- A. 04
- B. 08
- C. 16
- D. 32

5-6 What is the usable size of Network bits in Class B of IP address?

- A. 04
- B. 08
- C. 14
- D. 16

5-7 In which type of RAID, data is mirrored between two disks.

- A. RAID 0
- B. RAID 1
- C. RAID 2
- D. RAID 3

5-8 What do you mean by broadcasting in Networking?

- A. It means addressing a packet to all machine
- B. It means addressing a packet to some machine
- C. It means addressing a packet to a particular machine
- D. It means addressing a packet to except a particular machine

5-9 Which of the following is/are Protocols of Application?

- A. FTP
- B. DNS
- C. Telnet
- D. All of above

5-10 Which of the following protocol is/are defined in Transport layer?

- A. FTP
- B. TCP
- C. UDP
- D. B & C

[Click Here for Answers](#)

1 – C / 2 – A / 3 – A / 4 – D / 5 – C / 6 – C / 7 – B / 8 – A / 9 – D / 10 – D

Multiple Choice Questions of Computer Networking

6-1. What is the IP Address range of APIPA?

- A. 169.254.0.1 to 169.254.0.254
- B. 169.254.0.1 to 169.254.0.255
- C. 169.254.0.1 to 169.254.255.254
- D. 169.254.0.1 to 169.254.255.255

6-2. Which of the following is correct in VLSM?

- A. Can have subnets of different sizes
- B. Subnets must be in same size
- C. No required of subnet
- D. All of above

6-3. What does the port number in a TCP connection specify?

- A. It specifies the communication process on the two end systems

- B. It specifies the quality of the data & connection
- C. It specify the size of data
- D. All of the above

6-4. The class-based addressing is also known as

- A. Modern Model
- B. Classful Model
- C. Classless Model
- D. Heterogeneous Model

6-5. Which of the following is correct in CIDR?

- A. Class A includes Class B network
- B. There are only two networks
- C. There are high & low class network
- D. There is no concept of class A, B, C networks

6-6. What is the size of Source and Destination IP address in IP header?

- A. 4 bits
- B. 8 bits
- C. 16 bits
- D. 32 bits

6-7. Which of the following is reliable communication?

- A. TCP
- B. IP
- C. UDP
- D. All of them

6-8. What is the typical range of Ephemeral ports?

- A. 1 to 80
- B. 1 to 1024
- C. 80 to 8080
- D. 1024 to 65535

6-9. What is the purpose of the PSH flag in the TCP header?

- A. Typically used to indicate end of message
- B. Typically used to indicate beginning of message
- C. Typically used to push the message
- D. Typically used to indicate stop the message

6-10. What is the natural mask for a class C Network?

- A. 255.255.255.1
- B. 255.255.255.0
- C. 255.255.255.254
- D. 255.255.255.255

Click Here for Answers

1 – C / 2 – A / 3 – A / 4 – B / 5 – D / 6 – D / 7 – A / 8 – D / 9 – A / 10 – B

1. When collection of various computers seems a single coherent system to its client, then it is called network system
a) computer distributed and (b) mentioned
b) both of the
c) none
d) both of the

View Answer

Answer:b

Explanation:None.

2. Two devices are in network if
- a) a process in one device is able to exchange information with a process in another device
 - b) a process is running on both devices
 - c) PIDs of the processes running of different devices are same
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Which one of the following computer network is built on the top of another network?

- a) prior network
- b) chief network
- c) prime network
- d) overlay network

[View Answer](#)

Answer:d

Explanation:None.

4. In computer network nodes are
- a) the computer that originates the data
 - b) the computer that routes the data
 - c) the computer that terminates the data
 - d) all of the mentioned

[View Answer](#)

5. Communication channel is shared by all the machines on the network in

- a) broadcast network
- b) unicast network
- c) multicast network
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. Bluetooth is an example of
- a) personal area network
 - b) local area network
 - c) virtual private network

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

- a) bridge
- b) firewall
- c) router
- d) all of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. A list of protocols used by a system, one protocol per layer, is called

- a) protocol architecture
- b) protocol stack
- c) protocol suit
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. Network congestion occurs

- a) in case of traffic overloading
- b) when a system terminates
- c) when connection between two nodes terminates
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. Which one of the following extends a private network across public networks?

- a) local area network
- b) virtual private network
- c) enterprise private network
- d) storage area network

[View Answer](#)

Answer:b

Explanation:None.

This set of Computer Networks Questions & Answers focuses on "Physical Media".

1) Which of this is not a guided media ?

- a) Fiber optical cable
- b) Coaxial cable
- c) Wireless LAN
- d) Copper wire

[View Answer](#)

Answer: c

Explanation: Wireless LAN is unguided media.

2) UTP is commonly used in

- a) DSL
- b) FTTP
- c) HTTP
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

3) Coaxial cable consists of _____ concentric copper conductors.

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: None.

4) Fiber optics posses following properties

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

5) If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps),

- a) $n \times 39.8$
- b) $n \times 51.8$

- c) $2n^*51.8$
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

6) Terrestrial radio channels are broadly classified into _____ groups.

- a) 2
- b) 3
- c) 4
- d) 1

[View Answer](#)

Answer: b

Explanation: The three types are those that operate over very short distance, those that operate in local areas, those that operate in the wide area.

7) Radio channels are attractive medium because

- a) Can penetrate walls
- b) Connectivity can be given to mobile user
- c) Can carry signals for long distance
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

8) Geostationary satellites

- a) Are placed at a fixed point above the earth
- b) Rotate the earth about a fixed axis
- c) Rotate the earth about a varying axis
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: They are placed in orbit at 36,000km above Earth's surface.

1. A piece of icon or image on a web page associated with another webpage is called

- a) url
 - b) hyperlink
 - c) plugin
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. Dynamic web page
- a) is same every time whenever it displays
 - b) generates on demand by a program or a request from browser
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

3. What is a web browser?
- a) a program that can display a web page
 - b) a program used to view html documents
 - c) it enables user to access the resources of internet
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

4. Common gateway interface is used to
- a) generate executable files from web content by web server
 - b) generate web pages
 - c) stream videos
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. URL stands for
- a) unique reference label
 - b) uniform reference label
 - c) uniform resource locator
 - d) unique resource locator

[View Answer](#)

Answer:c

Explanation:None.

6. A web cookie is a small piece of data
- a) sent from a website and stored in user's web browser while a user is browsing a website
 - b) sent from user and stored in the server while a user is browsing a website

- c) sent from root server to all servers
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. Which one of the following is not used to generate dynamic web pages?

- a) PHP
b) ASP.NET
c) JSP
d) none of the the mentioned

[View Answer](#)

8. An alternative of javascript on windows platform is

- a) VBScript
b) ASP.NET
c) JSP
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. What is document object model (DOM)?

- a) convention for representing and interacting with objects in html documents
b) application programming interface
c) hierarchy of objects in the mentioned
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. AJAX stands for

- a) asynchronous javascript and xml
b) advanced JSP and xml
c) asynchronous JSP and xml
d) advanced javascript and xml

[View Answer](#)

Answer:a

Explanation:None.

1. Multiple objects can be sent over a TCP connection between client and server in

- a) persistent HTTP
- b) nonpersistent HTTP
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. HTTP is _____ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. In the network HTTP resources are located by

- a) uniform resource identifier
- b) unique resource locator
- c) unique resource identifier
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. HTTP client requests by establishing a _____ connection to a particular port on the server.

- a) user datagram protocol
- b) transmission control protocol
- c) broader gateway protocol
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

5. In HTTP pipelining

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

- b) multiple HTTP requests can not be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. FTP server listens for connection on port number
- a) 20
 - b) 21
 - c) 22
 - d) 23

[View Answer](#)

Answer:b

Explanation:None.

7. In FTP protocol, client contacts server using ____ as the transport protocol.
- a) transmission control protocol
 - b) user datagram protocol
 - c) datagram congestion control protocol
 - d) stream control transmission protocol

[View Answer](#)

Answer:a

Explanation:None.

8. In which mode FTP, the client initiates both the control and data connections.
- a) active mode
 - b) passive mode
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. The file transfer protocol is built on
- a) data centric architecture
 - b) service oriented architecture
 - c) client server architecture
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

10. In file transfer protocol, data transfer can be done in
a) stream mode
b) block mode
c) compressed mode
d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

1. Ethernet frame consists of
a) MAC address
b) IP address
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. What is start frame delimiter (SFD) in ethernet frame?
a) 10101010
b) 10101011
c) 00000000
d) 11111111

[View Answer](#)

Answer:b

Explanation:None.

3. MAC address is of
1) 24 bits
b) 36 bits
c) 42 bits
d) 48 bits

[View Answer](#)

Answer:d

Explanation:None.

4. What is autonegotiation?
a) a procedure by which two connected devices choose common transmission

parameters

- b) a security algorithm
- c) a routing algorithm
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. Ethernet in metropolitan area network (MAN) can be used as
- a) pure ethernet
 - b) over SDH
 - c) over MPLS
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. A point-to-point protocol over ethernet is a network protocol for
- a) encapsulating PPP frames inside ethernet frames
 - b) encapsulating ethernet frames inside PPP frames
 - c) for security of ethernet frames
 - d) for security of PPP frames

[View Answer](#)

Answer:a

Explanation:None.

7. High speed ethernet works on
- a) coaxial cable
 - b) twisted pair cable
 - c) optical fiber
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. The maximum size of payload field in ethernet frame is
- a) 1000 bytes
 - b) 1200 bytes
 - c) 1300 bytes
 - d) 1500 bytes

[View Answer](#)

Answer:d

Explanation:None.

9. What is interframe gap?
a) idle time between frames
b) idle time between frame bits
c) idle time between packets
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called
a) short frame
b) run frame
c) mini frame
d) man frame

[View Answer](#)

Answer:b

Explanation:None.

This set of Computer Networks Questions & Answers focuses on "Topology".

1) Physical or logical arrangement of network is

- a) Topology
- b) Routing
- c) Networking
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

2) In this topology there is a central controller or hub

- a) Star
- b) Mesh
- c) Ring
- d) Bus

[View Answer](#)

Answer: a

Explanation: None.

3) This topology requires multipoint connection

- a) Star
- b) Mesh
- c) Ring
- d) Bus

[View Answer](#)

Answer: d

Explanation: None.

4) Data communication system spanning states, countries, or the whole world is

- a) LAN
- b) WAN
- c) MAN
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Wide area network(WAN) covers the whole of the world network.

5) Data communication system within a building or campus is

- a) LAN
- b) WAN
- c) MAN
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

6) Expand WAN

- a) World area network
- b) Wide area network
- c) Web area network
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

Computer Networks Questions & Answers – Packet Switching & Circuit Switching

This set of Computer Networks Questions & Answers focuses on “Packet Switching and Circuit Switching”.

1) A local telephone network is an example of a _____ network

- a) Packet switched
- b) Circuit switched
- c) both of the mentioned
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

2) Most packet switches use this principle

- a) Stop and wait
- b) Store and forward
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet.

3) If there are N routers from source to destination, total end to end delay in sending packet $P(L \rightarrow \text{number of bits in the packet } R \rightarrow \text{transmission rate})$

- a) N
- b) $(N*L)/R$
- c) $(2N*L)/R$
- d) L/R

[View Answer](#)

Answer: b

Explanation: None.

4) Method(s) to move data through a network of links and switches

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: None.

5) The resources needed for communication between end systems are reserved for the duration of session between end systems in _____

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Frequency switching

[View Answer](#)

Answer: b

Explanation: None.

6) As the resources are reserved between two communicating end systems in circuit switching, this is achieved

- a) authentication
- b) guaranteed constant rate
- c) reliability
- d) store and forward

[View Answer](#)

Answer: b

Explanation: None.

7) In _____ resources are allocated on demand.

- a) packet switching
- b) circuit switching
- c) line switching
- d) frequency switching

[View Answer](#)

Answer: a

Explanation: In packet switching there is no reservation.

Computer Networks Questions & Answers – IPv4

This set of Computer Networks Questions & Answers focuses on “IPv4”.

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling conventions

[View Answer](#)

Answer: a

Explanation: Error reporting is handled by ICMP.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

[View Answer](#)

Answer: c

Explanation: TOS-type of service identifies the type of packets.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

[View Answer](#)

Answer: c

Explanation: TTL field is decremented by one each time the datagram is processed by a router.

4. If the value in protocol field is 17, the transport layer protocol used is ____.

- a) TCP
- b) UDP
- c) Either of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: For TCP it is 6.

5. The data field can carry which of the following?

- a) TCP segemnt
- b) UDP segment
- c) ICMP messages
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Data field usually has tranaport layer segment, but it can also carry ICMP messages.

6. What should be the flag value to indicate the last fragment?

- a) 0
- b) 1

- c) TTI value
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: flag=0 indicates that it is the last fragment.

7. Which of these is not applicable for IP protocol?

- a) is connectionless
- b) offer reliable service
- c) offer unreliable service
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Ip offers unreliable service.

8. Fragmentation has following demerits

- a) complicates routers
- b) open to DOS attack
- c) overlapping of fragments.
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Fragmentation makes the implementation complex and also can create DOS attack.

9. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) TTL
- d) identifier

[View Answer](#)

Answer: a

Explanation: offset field specifies where the fragment fits in the original datagram.

Computer Networks Questions & Answers – IPv6

This set of Computer Networks Questions & Answers focuses on “IPv6”.

1. The size of IP address in IPv6 is

- a) 4bytes

- b) 128bits
- c) 8bytes
- d) 100bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long.

2. The header length of an IPv6 datagram is _____.

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram.

3. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast-switching
- c) ToS field
- d) Option field

[View Answer](#)

Answer: c

Explanation: This field enables to have different types of IP datagram.

4. IPv6 does not use _____ type of address

- a) Broadcast
- b) Multicast
- c) Anycast
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Broadcast has been eliminated in IPv6.

5. These are the features present in IPv4 but not in IPv6.

- a) Fragmentation
- b) Header checksum
- c) Options

d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: All the features are only present in IPv4 and not IPv6.

6. The ____ field determines the lifetime of IPv6 datagram

- a) Hop limit
- b) TTL
- c) Next header
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The Hop limit value is decremented by one by a router when the datagram is forwarded by the router. When the value becomes zero the datagram is discarded.

7. Dual-stack approach refers to

- a) Implementing Ipv4 with 2 stacks
- b) Implementing Ipv6 with 2 stacks
- c) Node has both IPv4 and IPv6 support
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: dual-stack is one of the approaches used to support IPv6 in already existing systems.

8. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is

- a) use dual-stack approach
- b) Tunneling
- c) No solution
- d) Replace the system

[View Answer](#)

Answer: b

Explanation: The IPv4 routers can form a tunnel.

9. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits

- a) 96 to 127
- b) 0 to 63
- c) 80 to 95

d) 64 to 79

[View Answer](#)

Answer: a

Explanation: Bits 96 to 127 in the datagram represents obfuscated 1Pv4 address.

Computer Networks Questions & Answers – Internet

This section of our 1000+ Computer Networks MCQs focuses on Internet.

1. What is internet?
- a) a single network
 - b) a vast collection of different networks
 - c) interconnection of local area networks
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. To join the internet, the computer has to be connected to a
- a) internet architecture board
 - b) internet society
 - c) internet service provider
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. Internet access by transmitting digital data over the wires of a local telephone network is provided by leased line
- a) digital subscriber line
 - b) digital signal line
 - c) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. ISP exchanges internet traffic between their networks by point to point
- a) internet exchange end
 - b) subscriber

- c) ISP end point
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. Which one of the following protocol is not used in internet?
a) HTTP
b) DHCP
c) DNS
d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. IPv6 addressed have a size of
a) 32 bits
b) 64 bits
c) 128 bits
d) 265 bits

[View Answer](#)

Answer:c

Explanation:None.

7. Internet works on
a) packet switching
b) circuit switching
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. Which one of the following is not an application layer protocol used in internet?
a) remote procedure call
b) internet relay chat
c) resource reservation protocol
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

9. Which protocol assigns IP address to the client connected in the internet?
- a) DHCP
 - b) IP
 - c) RPC
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. Which one of the following is not used in media access control?
- a) ethernet
 - b) digital subscriber line
 - c) fiber distributed data interface
 - d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

Computer Networks Questions & Answers – DHCP

This section of our 1000+ Computer Networks MCQs focuses on DHCP Protocol.

1. DHCP (dynamic host configuration protocol) provides _____ to the client.
- a) IP address
 - b) MAC address
 - c) url
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. DHCP is used for _____
- a) IPv6
 - b) IPv4
 - c) both (a) and (b)

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. The DHCP server

a) maintains a database of available IP addresses

b) maintains the information about client configuration parameters

c) grants a IP address when receives a request from a client

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

4. IP assigned for a client by DHCP server is

a) for a limited period

b) for unlimited period

c) not time dependent

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. DHCP uses UDP port _____ for sending data to the server.

a) 66

b) 67

c) 68

d) 69

[View Answer](#)

Answer:b

Explanation:None.

6. The DHCP server can provide the _____ of the IP addresses.

a) dynamic allocation

b) automatic allocation

c) static allocation

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

7. DHCP client and servers on the same subnet communicate via
- a) UDP broadcast
 - b) UDP unicast
 - c) TCP broadcast
 - d) TCP unicast

[View Answer](#)

Answer:a

Explanation:None.

8. After obtaining the IP address, to prevent the IP conflict the client may use
- a) internet relay chat
 - b) broader gateway protocol
 - c) address resolution protocol
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

9. What is DHCP snooping?
- a) techniques applied to ensure the security of an existing DHCP infrastructure
 - b) encryption of the DHCP server requests
 - c) algorithm for DHCP
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. If DHCP snooping is configured on a LAN switch, then clients having specific _____ can access the network.

- a) MAC address
- b) IP address
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Access Networks

This set of Computer Networks Questions & Answers focuses on “Access Networks”.

1) Which of this is not a constituent of residential telephone line?

- a) A high-speed downstream channel
- b) A medium-speed downstream channel
- c) A low-speed downstream channel
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The third part is ordinary two way telephone channel.

2) In DSL telco provides these services

- a) Wired phone access
- b) ISP
- c) All of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The same company which provides phone connection is also its ISP in DSL.

3) The function of DSLAM is

- a) Convert analog signals into digital signals
- b) Convert digital signals into analog signals
- c) Amplify digital signals
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The DSLAM located in telco's Central Office does this function.

4) The following term is not associted with DSL

- a) DSLAM
- b) CO
- c) Splitter
- d) CMTS

[View Answer](#)

Answer: d

Explanation: Cable modem termination system is used in cable internet access.

5) HFC contains

- a) Fibre cable
- b) Coaxial cable
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

6) Choose the statement which is not applicable for cable internet access

- a) It is a shared broadcast medium
- b) It includes HFCs
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

[View Answer](#)

Answer: d

Explanation: In cable access analog signal is converted to digital signal by CMTS.

7) Among the optical-distribution architectures that is essentially switched ethernet is

- a) AON
- b) PON
- c) NON
- d) None of the mentioned

[View Answer](#)

Answer:a

Explanation: Active optical networks are essentially switched ethernets.

8) StarBand provides

- a) FTTH internet access
- b) Cable access
- c) Telephone access
- d) Satellite access

[View Answer](#)

Answer: d

Explanation: None.

9) Home Access is provided by

- a) DSL
- b) FTTP

- c) Cable
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

10) ONT is connected to splitter using

- a) High speed fibre cable
- b) HFC
- c) Optical cable
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

11) These factors affect transmission rate in DSL

- a) The gauge of the twisted-pair line
- b) Degree of electrical interference
- c) Shadow fading
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: Because DSL is made of twisted wire copper pair.

Computer Networks Questions & Answers – Physical Layer

This section of our 1000+ Computer Networks MCQs focuses on physical layer.

1. The physical layer concerns with
- a) process to bit-by-bit delivery
 - b) application to process delivery
 - c) none of application delivery
 - d) the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. Which transmission media has the highest transmission speed in a network?
- a) coaxial cable

- | | | | |
|----|---------|------------|-------|
| b) | twisted | pair | cable |
| c) | | optical | fiber |
| d) | | electrical | cable |

[View Answer](#)

Answer:c

Explanation:None.

3. Bits can be send over guided and unguided media as analog signal by
- | | | |
|----|-----------|------------|
| a) | digital | modulation |
| b) | amplitude | modulation |
| c) | frequency | modulation |
| d) | phase | modulation |

[View Answer](#)

Answer:a

Explanation:None.

4. The portion of physical layer that interfaces with the media access control sublayer is called
- | | | | | |
|----|----------|------------|----------|-----------|
| a) | physical | signalling | sublayer | |
| b) | physical | data | sublayer | |
| c) | physical | address | sublayer | |
| d) | none | of | the | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

5. physical layer provides
- | | | | | | | | |
|----|---------------|----------------|----|--------------|------------|--------|-----------|
| a) | mechanical | specifications | of | electrical | connectors | and | cables |
| b) | electrical | specification | of | transmission | line | signal | level |
| c) | specification | for | IR | over | optical | | fiber |
| d) | all | of | | the | | | mentioned |

[View Answer](#)

Answer:d

Explanation:None.

6. In asynchronous serial communication the physical layer provides
- | | | | | |
|----|-------|------|------|------------|
| a) | start | and | stop | signalling |
| b) | | flow | | control |
| c) | both | (a) | and | (b) |

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. The physical layer is responsible for

a) line coding

b) channel coding

c) modulation

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

8. The physical layer translates logical communication requests from the _____ into hardware specific operations.

a) data link layer

b) network layer

c) trasnport layer

d) application layer

[View Answer](#)

Answer:a

Explanation:None.

9. A single channel is shared by multiple signals by

a) analog modulation

b) digital modulation

c) multiplexing

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

10. Wireless transmission can be done via

a) radio waves

b) microwaves

c) infrared

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

Computer Networks Questions & Answers – Network Layer

This section of our 1000+ Computer Networks MCQs focuses on network layer.

1. The network layer concerns with
- a) bits
 - b) frames
 - c) packets
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

2. Which one of the following is not a function of network layer?
- a) routing
 - b) inter-networking
 - c) congestion control
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

3. The 4 byte IP address consists of
- a) network address
 - b) host address
 - c) both (a) and (b)
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

4. In virtual circuit network each packet contains
- a) full source and destination address
 - b) a short VC number
 - c) both (a) and (b)
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

5. Which one of the following routing algorithm can be used for network layer design?
- a) shortest path algorithm
 - b) distance vector routing
 - c) link state routing
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. Multidestination routing
- a) is same as broadcast routing
 - b) contains the list of all destinations
 - c) data is not sent by packets
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. A subset of a network that includes all the routers but contains no loops is called tree
- a) spanning tree
 - b) spider structure
 - c) spider tree
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. Which one of the following algorithm is not used for congestion control?
- a) traffic aware routing
 - b) admission control
 - c) load shedding
 - d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

9. The network layer protocol of internet is
a) ethernet
b) internet protocol
c) hypertext transfer protocol
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. ICMP is primarily used for
a) error and diagnostic functions
b)
c)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Transport Layer

This section of our 1000+ Computer Networks MCQs focuses transport layer.

1. Transport layer aggregates data from different applications into a single stream before passing it to
a) network layer
b) data link layer
c) application layer
d) physical layer

[View Answer](#)

Answer:a

Explanation:None.

2. Which one of the following is a transport layer protocol used in internet?
a) TCP
b) UDP
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. User datagram protocol is called connectionless because
- a) all UDP packets are treated independently by transport layer
 - b) it sends data as a stream of related packets
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. Transmission control protocol is
- a) connection oriented protocol
 - b) uses a three way handshake to establish a connection
 - c) receives data from application as a single stream
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

5. An endpoint of an inter-process communication flow across a computer network is called
- a) socket
 - b) pipe
 - c) port
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. Socket-style API for windows is called
- a) wsock
 - b) winsock
 - c) wins
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

7. Which one of the following is a version of UDP with congestion control?
- a) datagram congestion control protocol
 - b) stream transmission control protocol

- c) structured stream transport
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. A _____ is a TCP name for a transport service access point.
a) port
b) pipe
c) node
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. Transport layer protocols deals with communication
a) application to application communication
b) process to process communication
c) node to node communication
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. Which one of the following is a transport layer protocol?
a) stream control transmission protocol
b) internet control message protocol
c) neighbor discovery protocol
d) dynamic host configuration protocol

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Application Layer

This section of our 1000+ Computer Networks MCQs focuses on application layer.

1. The _____ translates internet domain and host names to IP address.
a) domain name system
b) routing information protocol

- | | | | |
|----|----------|-------|----------|
| c) | network | time | protocol |
| d) | internet | relay | chat |

[View Answer](#)

Answer:a

Explanation:None.

2. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?
- | | |
|----|-----------------------|
| a) | HTTP |
| b) | FTP |
| c) | telnet |
| d) | none of the mentioned |

[View Answer](#)

Answer:c

Explanation:None.

3. Application layer protocol defines exchanged semantics for messages sent and responded to messages.
- | | |
|----|---|
| a) | types of messages exchanged |
| b) | message format, syntax and semantics |
| c) | rules for when and how processes send and respond to messages |
| d) | all of the mentioned |

[View Answer](#)

Answer:d

Explanation:None.

4. Which one of the following protocol delivers/stores mail to receiver server?
- | | |
|----|-------------------------------|
| a) | simple mail transfer protocol |
| b) | post office protocol |
| c) | internet access protocol |
| d) | hypertext transfer protocol |

[View Answer](#)

Answer:a

Explanation:None.

5. The ASCII encoding of binary data is called
- | | |
|----|------------------|
| a) | base 64 encoding |
| b) | base 32 encoding |
| c) | base 16 encoding |

d) base 8 encoding

[View Answer](#)

Answer:a

Explanation:None.

6. Which one of the following is an internet standard protocol for managing devices on IP network?

- | | | | | |
|----|----------|----------|---------------|----------|
| a) | dynamic | host | configuration | protocol |
| b) | simple | newtwork | management | protocol |
| c) | internet | message | access | protocol |
| d) | media | | gateway | protocol |

[View Answer](#)

Answer:b

Explanation:None.

7. Which one of the following is not an application layer protocol?

- | | | | | |
|----|----------|---------|---------------|----------|
| a) | media | gateway | protocol | |
| b) | dynamic | host | configuration | protocol |
| c) | resource | | reservation | protocol |
| d) | session | | initiation | protocol |

[View Answer](#)

Answer:c

Explanation:None.

8. Which protocol is a signalling communication protocol used for controlling multimedia communication sessions?

- | | | | | |
|----|---------|-------------|----------|-----------|
| a) | session | initiation | protocol | |
| b) | session | modelling | protocol | |
| c) | session | maintenance | protocol | |
| d) | none | of | the | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

9. Which one of the following is not correct?

- | | |
|----|--|
| a) | application layer protocols are used by both source and destination devices during a communication session |
| b) | application layer protocols implemented on the source and destination host must match |
| c) | both (a) and (b) |
| d) | none of the mentioned |

[View Answer](#)

Answer:c

Explanation:None.

10. When displaying a web page, the application layer uses the
- a) HTTP protocol
 - b) FTP protocol
 - c) SMTP protocol
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Application Layer

This set of Computer Networks Questions & Answers focuses on “Application Layer”.

1) This is not a application layer protocol

- a) HTTP
- b) SMTP
- c) FTP
- d) TCP

[View Answer](#)

Answer: d

Explanation: TCP is transport layer protocol

2) The packet of information at the application layer is called

- a) Packet
- b) Message
- c) Segment
- d) Frame

[View Answer](#)

Answer: b

Explanation: None.

3) This is one of the architecture paradigm

- a) Peer to peer
- b) Client-server
- c) HTTP
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: HTTP is a protocol.

4) Application developer has permission to decide the following on transport layer side

- a) Transport layer protocol
- b) Maximum buffer size
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

5) Application layer offers _____ service

- a) End to end
- b) Process to process
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

6) E-mail is

- a) Loss-tolerant application
- b) Bandwidth-sensitive application
- c) Elastic application
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Because it can work with available throughput.

7) Pick the odd one out

- a) File transfer
- b) File download
- c) E-mail
- d) Interactive games

[View Answer](#)

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

8) Which of the following is an application layer service ?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

9) To deliver a message to the correct application program running on a host, the _____ address must be consulted

- a) IP
- b) MAC
- c) Port
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

10) This is a time-sensitive service

- a) File transfer
- b) File download
- c) E-mail
- d) Internet telephony

[View Answer](#)

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

11) Transport services available to applications in one or another form

- a) Reliable data transfer
- b) Timing
- c) Security
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

12) Electronic mail uses this Application layer protocol

- a) SMTP

- b) HTTP
- c) FTP
- d) SIP

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – HTTP

This set of Computer Networks Questions & Answers focuses on “HTTP”.

1. The number of objects in a Web page which consists of 4 jpeg images and HTML text is _____

- a) 4
- b) 1
- c) 5
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: 4 jpeg images + 1 base HTML file.

2. The default connection type used by HTTP is _____

- a) Persistent
- b) Non-persistent
- c) Either of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

3. The time taken by a packet to travel from client to server and then back to the client is called _____

- a) STT
- b) RTT
- c) PTT
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: RTT stands for round-trip time.

4. The HTTP request message is sent in _____ part of three-way handshake.

- a) First

- b) Second
- c) Third
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

5. In the process of fetching a web page from a server the HTTP request/response takes _____ RTTs.

- a) 2
- b) 1
- c) 4
- d) 3

[View Answer](#)

Answer: b

Explanation: None.

6. The first line of HTTP request message is called _____

- a) Request line
- b) Header line
- c) Status line
- d) Entity line

[View Answer](#)

Answer: a

Explanation: The line followed by request line are called header lines and status line is the initial part of response message.

7. The values GET, POST, HEAD etc are specified in _____ of HTTP message

- a) Request line
- b) Header line
- c) Status line
- d) Entity body

[View Answer](#)

Answer: a

Explanation: It is specified in the method field of request line in the HTTP request message.

8. The _____ method when used in the method field, leaves entity body empty.

- a) POST
- b) GET
- c) Both of the mentioned

d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

9. The HTTP response message leaves out the requested object when _____ method is used

a) GET

b) POST

c) HEAD

d) PUT

[View Answer](#)

Answer: c

Explanation: None.

10. Find the oddly matched HTTP status codes

a) 200 OK

b) 400 Bad Request

c) 301 Moved permanently

d) 304 Not Found

[View Answer](#)

Answer: d

Explanation: 404 Not Found.

11. Which of the following is not correct ?

a) Web cache doesn't have its own disk space

b) Web cache can act both like server and client

c) Web cache might reduce the response time

d) Web cache contains copies of recently requested objects

[View Answer](#)

Answer: a

Explanation: None.

12. The conditional GET mechanism

a) Imposes conditions on the objects to be requested

b) Limits the number of responses from a server

c) Helps to keep a cache up-to-date

d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

13. Which of the following is present in both an HTTP request line and a status line?

- a) HTTP version number
- b) URL
- c) Method
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – Network Utilities

This set of Computer Networks Questions & Answers focuses on “Network Utilities”.

1) Ping can

- a) Measure round-trip time
- b) Report packet loss
- c) Report latency
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

2) Ping sweep is a part of

- a) Traceroute
- b) Nmap
- c) Route
- d) Ipconfig

[View Answer](#)

Answer: b

Explanation: A ping sweep is a method that can establish a range of IP addresses which map to live hosts and are mostly used by network scanning tools like nmap.

3) ICMP is used in

- a) Ping
- b) Traceroute
- c) Ifconfig

d) Both a and b

[View Answer](#)

Answer: d

Explanation: None.

4) _____ command is used to manipulate TCP/IP routing table.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: a

Explanation: None.

5) If you want to find the number of routers between a source and destination, the utility to be used is.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: d

Explanation: None.

6) Which of the following is related to ipconfig in Microsoft Windows ?

- a) Display all current TCP/IP network configuration values
- b) Modify DHCP settings
- c) Modify DNS settings
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

7) This allows to check if a domain is available for registration.

- a) Domain Check
- b) Domain Dossier
- c) Domain Lookup
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

8) Choose the wrong statement

- a) Nslookup is used to query a DNS server for DNS data
- b) Ping is used to check connectivity
- c) Pathping combines the functionality of ping with that of route
- d) Ifconfig can configure TCP/IP network interface parameters

[View Answer](#)

Answer: c

Explanation: Pathping combines the functionality of ping with that of traceroute (tracert).

Computer Networks Questions & Answers – FTP

This set of Computer Networks Questions & Answers focuses on “FTP”.

1) Expansion of FTP is

- a) Fine Transfer Protocol
- b) File Transfer Protocol
- c) First Transfer Protocol
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

2) FTP is built on _____ architecture

- a) Client-server
- b) P2P
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

3) FTP uses _____ parallel TCP connections to transfer a file

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: Control connection and data connection.

4) Identify the incorrect statement

- a) FTP stands for File Transfer Protocol
- b) FTP uses two parallel TCP connections
- c) FTP sends its control information in-band
- d) FTP sends exactly one file over the data connection

[View Answer](#)

Answer: c

Explanation: FTP is out-of-band as it has separate control connection.

5) If 5 files are transferred from server A to client B in the same session. The number of TCP connection between A and B is

- a) 5
- b) 10
- c) 2
- d) 6

[View Answer](#)

Answer: d

Explanation: 1 control connection and other 5 for five file transfers.

6) FTP server

- a) Maintains state
- b) Is stateless
- c) Has single TCP connection for a file transfer
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

7) The commands, from client to server, and replies, from server to client, are sent across the control connection in ____ bit ASCII format

- a) 8
- b) 7
- c) 3
- d) 5

[View Answer](#)

Answer: b

Explanation: None.

8) Find the FTP reply whose message is wrongly matched

- a) 331 – Username OK, password required
- b) 425 – Can't open data connection
- c) 452 – Error writing file
- d) 452 – Can't open data connection

[View Answer](#)

Answer: d

Explanation: None.

9) Mode of data transfer in FTP, where all the is left to TCP

- a) Stream mode
- b) Block mode
- c) Compressed mode
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

10) The password is sent to the server using _____ command

- a) PASSWD
- b) PASS
- c) PASSWORD
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

Computer Networks Questions & Answers – Network Attacks

This set of Computer Networks Questions & Answers focuses on “Network Attacks”.

1) The attackers a network of compromised devices known as

- a) Internet
- b) Botnet
- c) Telnet
- d) D-net

[View Answer](#)

Answer: b

Explanation: None.

2) Which of the following is a form of DoS attack ?

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

3) The DoS attack is which the attacker establishes a large number of half-open or fully open TCP connections at the target host

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

4)The DoS attack is which the attacker sends deluge of packets to the targeted host

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

5) Packet sniffers involve

- a) Active receiver
- b) Passive receiver
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: They do not inject packets into the channel.

6) Sniffers can be deployed in

- a) Wired environment
- b) WiFi
- c) Ethernet LAN
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

7) Firewalls are often configured to block

- a) UDP traffic
- b) TCP traffic
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – Security In The Internet

This section of our 1000+ Computer Networks MCQs focuses on Security In The Internet.

1. IPSec is designed to provide the security at the
- a) transport layer
 - b) network layer
 - c) application layer
 - d) session layer

[View Answer](#)

Answer:b

Explanation:None.

2. In tunnel mode IPsec protects the
- a) entire IP packet
 - b) IP header
 - c) IP payload
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Network layer firewall works as a
a) frame filter
b) packet filter
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. Network layer firewall has two sub-categories as
a) stateful firewall and stateless firewall
b) bit oriented firewall and byte oriented firewall
c) frame firewall and packet firewall
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. WPA2 is used for security in
a) ethernet
b) bluetooth
c) wi-fi
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

6. An attempt to make a computer resource unavailable to its intended users is called
a) denial-of-service attack
b) virus attack
c) worms attack
d) botnet process

[View Answer](#)

Answer:a

Explanation:None.

7. Extensible authentication protocol is authentication framework frequently used in
a) wired personal area network
b) wireless networks

c) wired local area network
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Pretty good privacy (PGP) is used in
a) browser security
b) email security
c) FTP security
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. PGP encrypts data by using a block cipher called
a) international data encryption algorithm
b) private data encryption algorithm
c) intrenet data encryption algorithm
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called
a) DNS lookup
b) DNS hijacking
c) DNS spoofing
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Security In The Internet

This section of our 1000+ Computer Networks MCQs focuses on Security In The Internet.

1. IPSec is designed to provide the security at the
a) transport layer

- | | | |
|----|-------------|-------|
| b) | network | layer |
| c) | application | layer |
| d) | session | layer |

[View Answer](#)

Answer:b

Explanation:None.

2. In tunnel mode IPsec protects the packet header payload mentioned
- | | | | |
|----|--------|----|---------------|
| a) | entire | IP | packet |
| b) | | IP | header |
| c) | | IP | payload |
| d) | none | of | the mentioned |

[View Answer](#)

Answer:a

Explanation:None.

3. Network layer firewall works as a filter
- | | | | |
|----|------|--------|---------------|
| a) | | frame | filter |
| b) | | packet | filter |
| c) | both | (a) | and (b) |
| d) | none | of | the mentioned |

[View Answer](#)

Answer:b

Explanation:None.

4. Network layer firewall has two sub-categories as stateful and stateless firewall
- | | | | | | |
|----|--------------|----------|-----|---------------|-----------|
| a) | stateful | firewall | and | stateless | firewall |
| b) | bit oriented | firewall | and | byte oriented | firewall |
| c) | frame | firewall | and | packet | firewall |
| d) | none | of | the | | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

5. WPA2 is used for security in ethernet bluetooth wi-fi
- | | | | |
|----|--|--|-----------|
| a) | | | ethernet |
| b) | | | bluetooth |
| c) | | | wi-fi |

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

6. An attempt to make a computer resource unavailable to its intended users is called

a) denial-of-service attack

b) virus attack

c) worms attack

d) botnet process

[View Answer](#)

Answer:a

Explanation:None.

7. Extensible authentication protocol is authentication framework frequently used in

a) wired personal area network

b) wireless networks

c) local area network

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Pretty good privacy (PGP) is used in

a) browser security

b) email security

c) FTP security

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. PGP encrypts data by using a block cipher called

a) international data encryption algorithm

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c) intrenet data encryption algorithm

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[View Answer](#)

Answer:a

Explanation:None.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called

- a) DNS lookup
- b) DNS hijacking
- c) DNS spoofing
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Wireless LAN

This section of our 1000+ Computer Networks MCQs focuses on Wireless LAN.

1. What is the access point (AP) in wireless LAN?

- a) device that allows wireless devices to connect to a wired network
- b) wireless devices itself
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. In wireless ad-hoc network

- a) access point is not required
- b) access point is must
- c) nodes are not required
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA
- c) ALOHA

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. In wireless distribution system

- a) multiple access point are inter-connected with each other
- b) there is no access point
- c) only one access point exists
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. A wireless network interface controller can work in

- a) infrastructure mode
- b) ad-hoc mode
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:In infrastructure mode WNIC needs access point but in ad-hoc mode access point is not required.

6. In wireless network an extended service set is a set of

- a) connected basic service sets
- b) all stations
- c) all access points
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. Mostly _____ is used in wireless LAN.

- a) time division multiplexing
- b) orthogonal frequency division multiplexing
- c) space division multiplexing
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Which one of the following event is not possible in wireless LAN.

- a) collision detection
- b) Acknowledgement of data frames
- c) multi-mode data transmission
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. What is Wired Equivalent Privacy (WEP) ?

- a) security algorithm for ethernet
- b) security algorithm for wireless networks
- c) security algorithm for usb communication
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. What is WPA?

- a) wi-fi protected access
- b) wired protected access
- c) wired process access
- d) wi-fi process access

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – WiMAX

This section of our 1000+ Computer Networks MCQs focuses on WiMAX.

1. WiMAX stands for

- a) wireless maximum communication
- b) worldwide interoperability for microwave access
- c) worldwide international standard for microwave access
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. WiMAX provides

- a) simplex communication
- b) half duplex communication
- c) full duplex communication
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. WiMAX uses the

- a) orthogonal frequency division multiplexing
- b) time division multiplexing
- c) space division multiplexing
- d) all of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. Which one of the following modulation scheme is supported by WiMAX?

- a) binary phase shift keying modulation
- b) quadrature phase shift keying modulation
- c) quadrature amplitude modulation
- d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

5. WiMAX MAC layer provides an interface between

- a) higher transport layers and physical layer
- b) application layer and network layer
- c) data link layer and network layer
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. For encryption, WiMAX supports

- a) advanced encryption standard
- b) triple data encryption standard
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. WiMAX provides

- a) VoIP services
- b) IPTV services
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. Devices that provide the connectivity to a WiMAX network are known as

- a) subscriber stations
- b) base stations
- c) gateway
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. WiMAX is mostly used for

- a) local area network
- b) metropolitan area network
- c) personal area network
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. Which one of the following frequency is not used in WiMAX for communication?

- a) 2.3 GHz
- b) 2.4 GHz

c) 2.5 GHz

d) 3.5 GHz

[View Answer](#)

Answer:b

Explanation:None.

Multiple Choice Questions of Computer Networking

1-1 Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

1-2 What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

1-3 How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

1-4 DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

1-5 IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

1-6 DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

1-7 What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

1-8 ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

1-9 What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

1-10 Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)
- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

[Click Here for Answers](#)

1 – D / 2 – C / 3 – D / 4 – B / 5 – C / 6 – C / 7 – A / 8 – D / 9 – A / 10 – B

Multiple Choice Questions of Computer Networking

2-1 Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

2-2 Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

2-3 _____ provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

2-4 Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

2-5 Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C
- D. Class D

2-6 Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16
- D. Network bit – 12, Host bit – 14

2-7 The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

2-8 How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

2-9 How many layers are in the TCP/IP model?

- A. 4 layers
- B. 5 layers
- C. 6 layers
- D. 7 layers

2-10 Which of the following layer of OSI model also called end-to-end layer?

- A. Presentation layer
 - B. Network layer
 - C. Session layer
 - D. Transport layer
-

[Click Here for Answers](#)

1 – C / 2 – D / 3 – A / 4 – A / 5 – D / 6 – A / 7 – C / 8 – B / 9 – A / 10 – D

Multiple Choice Questions of Computer Networking

3-1. Why IP Protocol is considered as unreliable?

- A. A packet may be lost
- B. Packets may arrive out of order
- C. Duplicate packets may be generated
- D. All of the above

3-2. What is the minimum header size of an IP packet?

- A. 16 bytes
- B. 10 bytes
- C. 20 bytes
- D. 32 bytes

3-3. Which of following provides reliable communication?

- A. TCP
- B. IP
- C. UDP

D. All of the above

3-4. What is the address size of IPv6 ?

- A. 32 bit
- B. 64 bit
- C. 128 bit
- D. 256 bit

3-5. What is the size of Network bits & Host bits of Class A of IP address?

- A. Network bits 7, Host bits 24
- B. Network bits 8, Host bits 24
- C. Network bits 7, Host bits 23
- D. Network bits 8, Host bits 23

3-6. What does Router do in a network?

- A. Forwards a packet to all outgoing links
- B. Forwards a packet to the next free outgoing link
- C. Determines on which outgoing link a packet is to be forwarded
- D. Forwards a packet to all outgoing links except the originated link

3-7. The Internet is an example of

- A. Cell switched network
- B. circuit switched network
- C. Packet switched network
- D. All of above

3-8. What does protocol defines?

- A. Protocol defines what data is communicated.
- B. Protocol defines how data is communicated.
- C. Protocol defines when data is communicated.
- D. All of above

3-9. What is the uses of subnetting?

- A. It divides one large network into several smaller ones
- B. It divides network into network classes
- C. It speeds up the speed of network
- D. None of above

3-10. Repeater operates in which layer of the OSI model?

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

[Click Here for Answers](#)

1 – D / 2 – C / 3 – A / 4 – C / 5 – A / 6 – C / 7 – C / 8 – D / 9 – A / 10 – A

Multiple Choice Questions of Computer Networking

4-1. What is the benefit of the Networking?

- A. File Sharing
- B. Easier access to Resources
- C. Easier Backups
- D. All of the Above

4-2. Which of the following is not the Networking Devices?

- A. Gateways
- B. Linux
- C. Routers
- D. Firewalls

4-3. What is the size of MAC Address?

- A. 16-bits
- B. 32-bits
- C. 48-bits
- D. 64-bits

4-4. Which of the following can be Software?

- A. Routers
- B. Firewalls
- C. Gateway
- D. Modems

4-5. What is the use of Ping command?

- A. To test a device on the network is reachable
- B. To test a hard disk fault
- C. To test a bug in a Application
- D. To test a Printer Quality

4-6. MAC Address is the example of

- A. Transport Layer
- B. Data Link Layer
- C. Application Layer
- D. Physical Layer

4-7. Routing tables of a router keeps track of

- A. MAC Address Assignments
- B. Port Assignments to network devices
- C. Distribute IP address to network devices
- D. Routes to use for forwarding data to its destination

4-8. Layer-2 Switch is also called

- A. Multiport Hub
- B. Multiport Switch
- C. Multiport Bridge
- D. Multiport NIC

4-9. Difference between T568A and T568B is

- A. Difference in wire color
- B. Difference in number of wires
- C. Just different length of wires
- D. Just different manufacturer standards

4-10. The meaning of Straight-through Cable is

- A. Four wire pairs connect to the same pin on each end
- B. The cable Which Directly connects Computer to Computer
- C. Four wire pairs not twisted with each other
- D. The cable which is not twisted

Click Here for Answers

1 – D / 2 – B / 3 – C / 4 – B / 5 – A / 6 – B / 7 – D / 8 – C / 9 – D / 10 – A

Multiple Choice Questions of Computer Networking

5-1 Which of the following is not the External Security Threats?

- A. Front-door Threats
- B. Back-door Threats
- C. Underground Threats
- D. Denial of Service (DoS)

5-2 What is the Demilitarized Zone?

- A. The area between firewall & connection to an external network
- B. The area between ISP to Military area
- C. The area surrounded by secured servers
- D. The area surrounded by the Military

5-3 What is the full form of RAID ?

- A. Redundant Array of Independent Disks
- B. Redundant Array of Important Disks
- C. Random Access of Independent Disks
- D. Random Access of Important Disks

5-4 What is the maximum header size of an IP packet?

- A. 32 bytes
- B. 64 bytes
- C. 30 bytes
- D. 60 bytes

5-5 What is the size of Host bits in Class B of IP address?

- A. 04
- B. 08
- C. 16
- D. 32

5-6 What is the usable size of Network bits in Class B of IP address?

- A. 04
- B. 08
- C. 14
- D. 16

5-7 In which type of RAID, data is mirrored between two disks.

- A. RAID 0
- B. RAID 1
- C. RAID 2
- D. RAID 3

5-8 What do you mean by broadcasting in Networking?

- A. It means addressing a packet to all machine
- B. It means addressing a packet to some machine
- C. It means addressing a packet to a particular machine
- D. It means addressing a packet to except a particular machine

5-9 Which of the following is/are Protocols of Application?

- A. FTP
- B. DNS
- C. Telnet
- D. All of above

5-10 Which of the following protocol is/are defined in Transport layer?

- A. FTP
- B. TCP
- C. UDP
- D. B & C

[Click Here for Answers](#)

1 – C / 2 – A / 3 – A / 4 – D / 5 – C / 6 – C / 7 – B / 8 – A / 9 – D / 10 – D

Multiple Choice Questions of Computer Networking

6-1. What is the IP Address range of APIPA?

- A. 169.254.0.1 to 169.254.0.254
- B. 169.254.0.1 to 169.254.0.255
- C. 169.254.0.1 to 169.254.255.254
- D. 169.254.0.1 to 169.254.255.255

6-2. Which of the following is correct in VLSM?

- A. Can have subnets of different sizes
- B. Subnets must be in same size
- C. No required of subnet
- D. All of above

6-3. What does the port number in a TCP connection specify?

- A. It specifies the communication process on the two end systems

- B. It specifies the quality of the data & connection
- C. It specify the size of data
- D. All of the above

6-4. The class-based addressing is also known as

- A. Modern Model
- B. Classful Model
- C. Classless Model
- D. Heterogeneous Model

6-5. Which of the following is correct in CIDR?

- A. Class A includes Class B network
- B. There are only two networks
- C. There are high & low class network
- D. There is no concept of class A, B, C networks

6-6. What is the size of Source and Destination IP address in IP header?

- A. 4 bits
- B. 8 bits
- C. 16 bits
- D. 32 bits

6-7. Which of the following is reliable communication?

- A. TCP
- B. IP
- C. UDP
- D. All of them

6-8. What is the typical range of Ephemeral ports?

- A. 1 to 80
- B. 1 to 1024
- C. 80 to 8080
- D. 1024 to 65535

6-9. What is the purpose of the PSH flag in the TCP header?

- A. Typically used to indicate end of message
- B. Typically used to indicate beginning of message
- C. Typically used to push the message
- D. Typically used to indicate stop the message

6-10. What is the natural mask for a class C Network?

- A. 255.255.255.1
- B. 255.255.255.0
- C. 255.255.255.254
- D. 255.255.255.255

Click Here for Answers

1 – C / 2 – A / 3 – A / 4 – B / 5 – D / 6 – D / 7 – A / 8 – D / 9 – A / 10 – B

1. When collection of various computers seems a single coherent system to its client, then it is called network system
a) computer distributed and (b) mentioned
b) both of the
c) none
d) both of the

View Answer

Answer:b

Explanation:None.

2. Two devices are in network if
- a) a process in one device is able to exchange information with a process in another device
 - b) a process is running on both devices
 - c) PIDs of the processes running of different devices are same
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Which one of the following computer network is built on the top of another network?

- a) prior network
- b) chief network
- c) prime network
- d) overlay network

[View Answer](#)

Answer:d

Explanation:None.

4. In computer network nodes are
- a) the computer that originates the data
 - b) the computer that routes the data
 - c) the computer that terminates the data
 - d) all of the mentioned

[View Answer](#)

5. Communication channel is shared by all the machines on the network in

- a) broadcast network
- b) unicast network
- c) multicast network
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. Bluetooth is an example of
- a) personal area network
 - b) local area network
 - c) virtual private network

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

- a) bridge
- b) firewall
- c) router
- d) all of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. A list of protocols used by a system, one protocol per layer, is called

- a) protocol architecture
- b) protocol stack
- c) protocol suit
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. Network congestion occurs

- a) in case of traffic overloading
- b) when a system terminates
- c) when connection between two nodes terminates
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. Which one of the following extends a private network across public networks?

- a) local area network
- b) virtual private network
- c) enterprise private network
- d) storage area network

[View Answer](#)

Answer:b

Explanation:None.

This set of Computer Networks Questions & Answers focuses on “Physical Media”.

1) Which of this is not a guided media ?

- a) Fiber optical cable
- b) Coaxial cable
- c) Wireless LAN
- d) Copper wire

[View Answer](#)

Answer: c

Explanation: Wireless LAN is unguided media.

2) UTP is commonly used in

- a) DSL
- b) FTTP
- c) HTTP
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

3) Coaxial cable consists of _____ concentric copper conductors.

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: None.

4) Fiber optics posses following properties

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

5) If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps),

- a) $n \times 39.8$
- b) $n \times 51.8$

- c) $2n^*51.8$
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

6) Terrestrial radio channels are broadly classified into _____ groups.

- a) 2
- b) 3
- c) 4
- d) 1

[View Answer](#)

Answer: b

Explanation: The three types are those that operate over very short distance, those that operate in local areas, those that operate in the wide area.

7) Radio channels are attractive medium because

- a) Can penetrate walls
- b) Connectivity can be given to mobile user
- c) Can carry signals for long distance
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

8) Geostationary satellites

- a) Are placed at a fixed point above the earth
- b) Rotate the earth about a fixed axis
- c) Rotate the earth about a varying axis
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: They are placed in orbit at 36,000km above Earth's surface.

1. A piece of icon or image on a web page associated with another webpage is called

- a) url
 - b) hyperlink
 - c) plugin
 - d) mentioned
- none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. Dynamic web page
- a) is same every time whenever it displays
 - b) generates on demand by a program or a request from browser
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

3. What is a web browser?
- a) a program that can display a web page
 - b) a program used to view html documents
 - c) it enables user to access the resources of internet
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

4. Common gateway interface is used to
- a) generate executable files from web content by web server
 - b) generate web pages
 - c) stream videos
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. URL stands for
- a) unique reference label
 - b) uniform reference label
 - c) uniform resource locator
 - d) unique resource locator

[View Answer](#)

Answer:c

Explanation:None.

6. A web cookie is a small piece of data
- a) sent from a website and stored in user's web browser while a user is browsing a website
 - b) sent from user and stored in the server while a user is browsing a website

- c) sent from root server to all servers
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. Which one of the following is not used to generate dynamic web pages?

- a) PHP
b) ASP.NET
c) JSP
d) none of the the mentioned

[View Answer](#)

8. An alternative of javascript on windows platform is

- a) VBScript
b) ASP.NET
c) JSP
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. What is document object model (DOM)?

- a) convention for representing and interacting with objects in html documents
b) application programming interface
c) hierarchy of objects in the mentioned
d) none of the the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. AJAX stands for

- a) asynchronous javascript and xml
b) advanced JSP and xml
c) asynchronous JSP and xml
d) advanced javascript and xml

[View Answer](#)

Answer:a

Explanation:None.

1. Multiple objects can be sent over a TCP connection between client and server in

- a) persistent HTTP
- b) nonpersistent HTTP
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. HTTP is _____ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. In the network HTTP resources are located by

- a) uniform resource identifier
- b) unique resource locator
- c) unique resource identifier
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. HTTP client requests by establishing a _____ connection to a particular port on the server.

- a) user datagram protocol
- b) transmission control protocol
- c) broader gateway protocol
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

5. In HTTP pipelining

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

- b) multiple HTTP requests can not be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. FTP server listens for connection on port number
- a) 20
 - b) 21
 - c) 22
 - d) 23

[View Answer](#)

Answer:b

Explanation:None.

7. In FTP protocol, client contacts server using ____ as the transport protocol.
- a) transmission control protocol
 - b) user datagram protocol
 - c) datagram congestion control protocol
 - d) stream control transmission protocol

[View Answer](#)

Answer:a

Explanation:None.

8. In which mode FTP, the client initiates both the control and data connections.
- a) active mode
 - b) passive mode
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. The file transfer protocol is built on
- a) data centric architecture
 - b) service oriented architecture
 - c) client server architecture
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

10. In file transfer protocol, data transfer can be done in
a) stream mode
b) block mode
c) compressed mode
d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

1. Ethernet frame consists of
a) MAC address
b) IP address
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. What is start frame delimiter (SFD) in ethernet frame?
a) 10101010
b) 10101011
c) 00000000
d) 11111111

[View Answer](#)

Answer:b

Explanation:None.

3. MAC address is of
1) 24 bits
b) 36 bits
c) 42 bits
d) 48 bits

[View Answer](#)

Answer:d

Explanation:None.

4. What is autonegotiation?
a) a procedure by which two connected devices choose common transmission

parameters

- b) a security algorithm
- c) a routing algorithm
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. Ethernet in metropolitan area network (MAN) can be used as
- a) pure ethernet
 - b) over SDH
 - c) over MPLS
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. A point-to-point protocol over ethernet is a network protocol for
- a) encapsulating PPP frames inside ethernet frames
 - b) encapsulating ethernet frames inside PPP frames
 - c) for security of ethernet frames
 - d) for security of PPP frames

[View Answer](#)

Answer:a

Explanation:None.

7. High speed ethernet works on
- a) coaxial cable
 - b) twisted pair cable
 - c) optical fiber
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. The maximum size of payload field in ethernet frame is
- a) 1000 bytes
 - b) 1200 bytes
 - c) 1300 bytes
 - d) 1500 bytes

[View Answer](#)

Answer:d

Explanation:None.

9. What is interframe gap?
a) idle time between frames
b) idle time between frame bits
c) idle time between packets
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called
a) short frame
b) run frame
c) mini frame
d) man frame

[View Answer](#)

Answer:b

Explanation:None.

This set of Computer Networks Questions & Answers focuses on "Topology".

1) Physical or logical arrangement of network is

- a) Topology
- b) Routing
- c) Networking
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

2) In this topology there is a central controller or hub

- a) Star
- b) Mesh
- c) Ring
- d) Bus

[View Answer](#)

Answer: a

Explanation: None.

3) This topology requires multipoint connection

- a) Star
- b) Mesh
- c) Ring
- d) Bus

[View Answer](#)

Answer: d

Explanation: None.

4) Data communication system spanning states, countries, or the whole world is

- a) LAN
- b) WAN
- c) MAN
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Wide area network(WAN) covers the whole of the world network.

5) Data communication system within a building or campus is

- a) LAN
- b) WAN
- c) MAN
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

6) Expand WAN

- a) World area network
- b) Wide area network
- c) Web area network
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

Computer Networks Questions & Answers – Packet Switching & Circuit Switching

This set of Computer Networks Questions & Answers focuses on “Packet Switching and Circuit Switching”.

1) A local telephone network is an example of a _____ network

- a) Packet switched
- b) Circuit switched
- c) both of the mentioned
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

2) Most packet switches use this principle

- a) Stop and wait
- b) Store and forward
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet.

3) If there are N routers from source to destination, total end to end delay in sending packet $P(L \rightarrow \text{number of bits in the packet } R \rightarrow \text{transmission rate})$

- a) N
- b) $(N*L)/R$
- c) $(2N*L)/R$
- d) L/R

[View Answer](#)

Answer: b

Explanation: None.

4) Method(s) to move data through a network of links and switches

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: None.

5) The resources needed for communication between end systems are reserved for the duration of session between end systems in _____

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Frequency switching

[View Answer](#)

Answer: b

Explanation: None.

6) As the resources are reserved between two communicating end systems in circuit switching, this is achieved

- a) authentication
- b) guaranteed constant rate
- c) reliability
- d) store and forward

[View Answer](#)

Answer: b

Explanation: None.

7) In _____ resources are allocated on demand.

- a) packet switching
- b) circuit switching
- c) line switching
- d) frequency switching

[View Answer](#)

Answer: a

Explanation: In packet switching there is no reservation.

Computer Networks Questions & Answers – IPv4

This set of Computer Networks Questions & Answers focuses on “IPv4”.

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling conventions

[View Answer](#)

Answer: a

Explanation: Error reporting is handled by ICMP.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

[View Answer](#)

Answer: c

Explanation: TOS-type of service identifies the type of packets.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

[View Answer](#)

Answer: c

Explanation: TTL field is decremented by one each time the datagram is processed by a router.

4. If the value in protocol field is 17, the transport layer protocol used is ____.

- a) TCP
- b) UDP
- c) Either of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: For TCP it is 6.

5. The data field can carry which of the following?

- a) TCP segemnt
- b) UDP segment
- c) ICMP messages
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Data field usually has tranaport layer segment, but it can also carry ICMP messages.

6. What should be the flag value to indicate the last fragment?

- a) 0
- b) 1

- c) TTI value
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: flag=0 indicates that it is the last fragment.

7. Which of these is not applicable for IP protocol?

- a) is connectionless
- b) offer reliable service
- c) offer unreliable service
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Ip offers unreliable service.

8. Fragmentation has following demerits

- a) complicates routers
- b) open to DOS attack
- c) overlapping of fragments.
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Fragmentation makes the implementation complex and also can create DOS attack.

9. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) TTL
- d) identifier

[View Answer](#)

Answer: a

Explanation: offset field specifies where the fragment fits in the original datagram.

Computer Networks Questions & Answers – IPv6

This set of Computer Networks Questions & Answers focuses on “IPv6”.

1. The size of IP address in IPv6 is

- a) 4bytes

- b) 128bits
- c) 8bytes
- d) 100bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long.

2. The header length of an IPv6 datagram is _____.

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram.

3. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast-switching
- c) ToS field
- d) Option field

[View Answer](#)

Answer: c

Explanation: This field enables to have different types of IP datagram.

4. IPv6 does not use _____ type of address

- a) Broadcast
- b) Multicast
- c) Anycast
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Broadcast has been eliminated in IPv6.

5. These are the features present in IPv4 but not in IPv6.

- a) Fragmentation
- b) Header checksum
- c) Options

d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: All the features are only present in IPv4 and not IPv6.

6. The ____ field determines the lifetime of IPv6 datagram

- a) Hop limit
- b) TTL
- c) Next header
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The Hop limit value is decremented by one by a router when the datagram is forwarded by the router. When the value becomes zero the datagram is discarded.

7. Dual-stack approach refers to

- a) Implementing Ipv4 with 2 stacks
- b) Implementing Ipv6 with 2 stacks
- c) Node has both IPv4 and IPv6 support
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: dual-stack is one of the approaches used to support IPv6 in already existing systems.

8. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is

- a) use dual-stack approach
- b) Tunneling
- c) No solution
- d) Replace the system

[View Answer](#)

Answer: b

Explanation: The IPv4 routers can form a tunnel.

9. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits

- a) 96 to 127
- b) 0 to 63
- c) 80 to 95

d) 64 to 79

[View Answer](#)

Answer: a

Explanation: Bits 96 to 127 in the datagram represents obfuscated 1Pv4 address.

Computer Networks Questions & Answers – Internet

This section of our 1000+ Computer Networks MCQs focuses on Internet.

1. What is internet?
- a) a single network
 - b) a vast collection of different networks
 - c) interconnection of local area networks
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. To join the internet, the computer has to be connected to a
- a) internet architecture board
 - b) internet society
 - c) internet service provider
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. Internet access by transmitting digital data over the wires of a local telephone network is provided by leased line
- a) digital subscriber line
 - b) digital signal line
 - c) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. ISP exchanges internet traffic between their networks by point to point
- a) internet exchange end
 - b) subscriber

- c) ISP end point
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. Which one of the following protocol is not used in internet?
a) HTTP
b) DHCP
c) DNS
d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. IPv6 addressed have a size of
a) 32 bits
b) 64 bits
c) 128 bits
d) 265 bits

[View Answer](#)

Answer:c

Explanation:None.

7. Internet works on
a) packet switching
b) circuit switching
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. Which one of the following is not an application layer protocol used in internet?
a) remote procedure call
b) internet relay chat
c) resource reservation protocol
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

9. Which protocol assigns IP address to the client connected in the internet?
- a) DHCP
 - b) IP
 - c) RPC
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. Which one of the following is not used in media access control?
- a) ethernet
 - b) digital subscriber line
 - c) fiber distributed data interface
 - d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

Computer Networks Questions & Answers – DHCP

This section of our 1000+ Computer Networks MCQs focuses on DHCP Protocol.

1. DHCP (dynamic host configuration protocol) provides _____ to the client.
- a) IP address
 - b) MAC address
 - c) url
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. DHCP is used for _____
- a) IPv6
 - b) IPv4
 - c) both (a) and (b)

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. The DHCP server

a) maintains a database of available IP addresses

b) maintains the information about client configuration parameters

c) grants a IP address when receives a request from a client

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

4. IP assigned for a client by DHCP server is

a) for a limited period

b) for unlimited period

c) not time dependent

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. DHCP uses UDP port _____ for sending data to the server.

a) 66

b) 67

c) 68

d) 69

[View Answer](#)

Answer:b

Explanation:None.

6. The DHCP server can provide the _____ of the IP addresses.

a) dynamic allocation

b) automatic allocation

c) static allocation

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

7. DHCP client and servers on the same subnet communicate via
- a) UDP broadcast
 - b) UDP unicast
 - c) TCP broadcast
 - d) TCP unicast

[View Answer](#)

Answer:a

Explanation:None.

8. After obtaining the IP address, to prevent the IP conflict the client may use
- a) internet relay chat
 - b) broader gateway protocol
 - c) address resolution protocol
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

9. What is DHCP snooping?
- a) techniques applied to ensure the security of an existing DHCP infrastructure
 - b) encryption of the DHCP server requests
 - c) algorithm for DHCP
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. If DHCP snooping is configured on a LAN switch, then clients having specific _____ can access the network.

- a) MAC address
- b) IP address
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Access Networks

This set of Computer Networks Questions & Answers focuses on “Access Networks”.

1) Which of this is not a constituent of residential telephone line?

- a) A high-speed downstream channel
- b) A medium-speed downstream channel
- c) A low-speed downstream channel
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The third part is ordinary two way telephone channel.

2) In DSL telco provides these services

- a) Wired phone access
- b) ISP
- c) All of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The same company which provides phone connection is also its ISP in DSL.

3) The function of DSLAM is

- a) Convert analog signals into digital signals
- b) Convert digital signals into analog signals
- c) Amplify digital signals
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The DSLAM located in telco's Central Office does this function.

4) The following term is not associted with DSL

- a) DSLAM
- b) CO
- c) Splitter
- d) CMTS

[View Answer](#)

Answer: d

Explanation: Cable modem termination system is used in cable internet access.

5) HFC contains

- a) Fibre cable
- b) Coaxial cable
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

6) Choose the statement which is not applicable for cable internet access

- a) It is a shared broadcast medium
- b) It includes HFCs
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

[View Answer](#)

Answer: d

Explanation: In cable access analog signal is converted to digital signal by CMTS.

7) Among the optical-distribution architectures that is essentially switched ethernet is

- a) AON
- b) PON
- c) NON
- d) None of the mentioned

[View Answer](#)

Answer:a

Explanation: Active optical networks are essentially switched ethernets.

8) StarBand provides

- a) FTTH internet access
- b) Cable access
- c) Telephone access
- d) Satellite access

[View Answer](#)

Answer: d

Explanation: None.

9) Home Access is provided by

- a) DSL
- b) FTTP

- c) Cable
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

10) ONT is connected to splitter using

- a) High speed fibre cable
- b) HFC
- c) Optical cable
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

11) These factors affect transmission rate in DSL

- a) The gauge of the twisted-pair line
- b) Degree of electrical interference
- c) Shadow fading
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: Because DSL is made of twisted wire copper pair.

Computer Networks Questions & Answers – Physical Layer

This section of our 1000+ Computer Networks MCQs focuses on physical layer.

1. The physical layer concerns with
- a) process to bit-by-bit delivery
 - b) application to process delivery
 - c) none of application delivery
 - d) mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. Which transmission media has the highest transmission speed in a network?
- a) coaxial cable

- | | | | |
|----|---------|------------|-------|
| b) | twisted | pair | cable |
| c) | | optical | fiber |
| d) | | electrical | cable |

[View Answer](#)

Answer:c

Explanation:None.

3. Bits can be send over guided and unguided media as analog signal by
- | | | |
|----|-----------|------------|
| a) | digital | modulation |
| b) | amplitude | modulation |
| c) | frequency | modulation |
| d) | phase | modulation |

[View Answer](#)

Answer:a

Explanation:None.

4. The portion of physical layer that interfaces with the media access control sublayer is called
- | | | | | |
|----|----------|------------|----------|-----------|
| a) | physical | signalling | sublayer | |
| b) | physical | data | sublayer | |
| c) | physical | address | sublayer | |
| d) | none | of | the | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

5. physical layer provides
- | | | | | | | | |
|----|---------------|----------------|----|--------------|------------|--------|-----------|
| a) | mechanical | specifications | of | electrical | connectors | and | cables |
| b) | electrical | specification | of | transmission | line | signal | level |
| c) | specification | for | IR | over | optical | | fiber |
| d) | all | of | | the | | | mentioned |

[View Answer](#)

Answer:d

Explanation:None.

6. In asynchronous serial communication the physical layer provides
- | | | | | |
|----|-------|------|------|------------|
| a) | start | and | stop | signalling |
| b) | | flow | | control |
| c) | both | (a) | and | (b) |

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. The physical layer is responsible for

a) line coding

b) channel coding

c) modulation

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

8. The physical layer translates logical communication requests from the _____ into hardware specific operations.

a) data link layer

b) network layer

c) trasnport layer

d) application layer

[View Answer](#)

Answer:a

Explanation:None.

9. A single channel is shared by multiple signals by

a) analog modulation

b) digital modulation

c) multiplexing

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

10. Wireless transmission can be done via

a) radio waves

b) microwaves

c) infrared

d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

Computer Networks Questions & Answers – Network Layer

This section of our 1000+ Computer Networks MCQs focuses on network layer.

1. The network layer concerns with
- a) bits
 - b) frames
 - c) packets
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

2. Which one of the following is not a function of network layer?
- a) routing
 - b) inter-networking
 - c) congestion control
 - d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

3. The 4 byte IP address consists of
- a) network address
 - b) host address
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

4. In virtual circuit network each packet contains
- a) full source and destination address
 - b) a short VC number
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

5. Which one of the following routing algorithm can be used for network layer design?
- a) shortest path algorithm
 - b) distance vector routing
 - c) link state routing
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

6. Multidestination routing
- a) is same as broadcast routing
 - b) contains the list of all destinations
 - c) data is not sent by packets
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. A subset of a network that includes all the routers but contains no loops is called
- a) spanning tree
 - b) spider structure
 - c) spider tree
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. Which one of the following algorithm is not used for congestion control?
- a) traffic aware routing
 - b) admission control
 - c) load shedding
 - d) none of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

9. The network layer protocol of internet is
a) ethernet
b) internet protocol
c) hypertext transfer protocol
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. ICMP is primarily used for
a) error and diagnostic functions
b)
c)
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Transport Layer

This section of our 1000+ Computer Networks MCQs focuses transport layer.

1. Transport layer aggregates data from different applications into a single stream before passing it to
a) network layer
b) data link layer
c) application layer
d) physical layer

[View Answer](#)

Answer:a

Explanation:None.

2. Which one of the following is a transport layer protocol used in internet?
a) TCP
b) UDP
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. User datagram protocol is called connectionless because
- a) all UDP packets are treated independently by transport layer
 - b) it sends data as a stream of related packets
 - c) both (a) and (b)
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. Transmission control protocol is
- a) connection oriented protocol
 - b) uses a three way handshake to establish a connection
 - c) receives data from application as a single stream
 - d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

5. An endpoint of an inter-process communication flow across a computer network is called
- a) socket
 - b) pipe
 - c) port
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. Socket-style API for windows is called
- a) wsock
 - b) winsock
 - c) wins
 - d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

7. Which one of the following is a version of UDP with congestion control?
- a) datagram congestion control protocol
 - b) stream transmission control protocol

- c) structured stream transport
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

8. A _____ is a TCP name for a transport service access point.
a) port
b) pipe
c) node
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. Transport layer protocols deals with communication
a) application to application communication
b) process to process communication
c) node to node communication
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. Which one of the following is a transport layer protocol?
a) stream control transmission protocol
b) internet control message protocol
c) neighbor discovery protocol
d) dynamic host configuration protocol

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Application Layer

This section of our 1000+ Computer Networks MCQs focuses on application layer.

1. The _____ translates internet domain and host names to IP address.
a) domain name system
b) routing information protocol

- c) network time protocol
d) internet relay chat

[View Answer](#)

Answer:a

Explanation:None.

2. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?

- a) HTTP
b) FTP
c) telnet
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. Application layer protocol defines
a) types of messages exchanged
b) message format, syntax and semantics
c) rules for when and how processes send and respond to messages
d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

4. Which one of the following protocol delivers/stores mail to receiver server?
a) simple mail transfer protocol
b) post office protocol
c) internet mail access protocol
d) hypertext transfer protocol

[View Answer](#)

Answer:a

Explanation:None.

5. The ASCII encoding of binary data is called
a) base 64 encoding
b) base 32 encoding
c) base 16 encoding

d) base 8 encoding

[View Answer](#)

Answer:a

Explanation:None.

6. Which one of the following is an internet standard protocol for managing devices on IP network?

- | | | | | |
|----|----------|----------|---------------|----------|
| a) | dynamic | host | configuration | protocol |
| b) | simple | newtwork | management | protocol |
| c) | internet | message | access | protocol |
| d) | media | | gateway | protocol |

[View Answer](#)

Answer:b

Explanation:None.

7. Which one of the following is not an application layer protocol?

- | | | | | |
|----|----------|---------|---------------|----------|
| a) | media | gateway | protocol | |
| b) | dynamic | host | configuration | protocol |
| c) | resource | | reservation | protocol |
| d) | session | | initiation | protocol |

[View Answer](#)

Answer:c

Explanation:None.

8. Which protocol is a signalling communication protocol used for controlling multimedia communication sessions?

- | | | | | |
|----|---------|-------------|----------|-----------|
| a) | session | initiation | protocol | |
| b) | session | modelling | protocol | |
| c) | session | maintenance | protocol | |
| d) | none | of | the | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

9. Which one of the following is not correct?

- | | |
|----|--|
| a) | application layer protocols are used by both source and destination devices during a communication session |
| b) | application layer protocols implemented on the source and destination host must match |
| c) | both (a) and (b) |
| d) | none of the mentioned |

[View Answer](#)

Answer:c

Explanation:None.

10. When displaying a web page, the application layer uses the
- a) HTTP protocol
 - b) FTP protocol
 - c) SMTP protocol
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – Application Layer

This set of Computer Networks Questions & Answers focuses on “Application Layer”.

1) This is not a application layer protocol

- a) HTTP
- b) SMTP
- c) FTP
- d) TCP

[View Answer](#)

Answer: d

Explanation: TCP is transport layer protocol

2) The packet of information at the application layer is called

- a) Packet
- b) Message
- c) Segment
- d) Frame

[View Answer](#)

Answer: b

Explanation: None.

3) This is one of the architecture paradigm

- a) Peer to peer
- b) Client-server
- c) HTTP
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: HTTP is a protocol.

4) Application developer has permission to decide the following on transport layer side

- a) Transport layer protocol
- b) Maximum buffer size
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

5) Application layer offers _____ service

- a) End to end
- b) Process to process
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

6) E-mail is

- a) Loss-tolerant application
- b) Bandwidth-sensitive application
- c) Elastic application
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Because it can work with available throughput.

7) Pick the odd one out

- a) File transfer
- b) File download
- c) E-mail
- d) Interactive games

[View Answer](#)

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

8) Which of the following is an application layer service ?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

9) To deliver a message to the correct application program running on a host, the _____ address must be consulted

- a) IP
- b) MAC
- c) Port
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

10) This is a time-sensitive service

- a) File transfer
- b) File download
- c) E-mail
- d) Internet telephony

[View Answer](#)

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

11) Transport services available to applications in one or another form

- a) Reliable data transfer
- b) Timing
- c) Security
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

12) Electronic mail uses this Application layer protocol

- a) SMTP

- b) HTTP
- c) FTP
- d) SIP

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – HTTP

This set of Computer Networks Questions & Answers focuses on “HTTP”.

1. The number of objects in a Web page which consists of 4 jpeg images and HTML text is _____

- a) 4
- b) 1
- c) 5
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: 4 jpeg images + 1 base HTML file.

2. The default connection type used by HTTP is _____

- a) Persistent
- b) Non-persistent
- c) Either of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

3. The time taken by a packet to travel from client to server and then back to the client is called _____

- a) STT
- b) RTT
- c) PTT
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: RTT stands for round-trip time.

4. The HTTP request message is sent in _____ part of three-way handshake.

- a) First

- b) Second
- c) Third
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

5. In the process of fetching a web page from a server the HTTP request/response takes _____ RTTs.

- a) 2
- b) 1
- c) 4
- d) 3

[View Answer](#)

Answer: b

Explanation: None.

6. The first line of HTTP request message is called _____

- a) Request line
- b) Header line
- c) Status line
- d) Entity line

[View Answer](#)

Answer: a

Explanation: The line followed by request line are called header lines and status line is the initial part of response message.

7. The values GET, POST, HEAD etc are specified in _____ of HTTP message

- a) Request line
- b) Header line
- c) Status line
- d) Entity body

[View Answer](#)

Answer: a

Explanation: It is specified in the method field of request line in the HTTP request message.

8. The _____ method when used in the method field, leaves entity body empty.

- a) POST
- b) GET
- c) Both of the mentioned

d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

9. The HTTP response message leaves out the requested object when _____ method is used

a) GET

b) POST

c) HEAD

d) PUT

[View Answer](#)

Answer: c

Explanation: None.

10. Find the oddly matched HTTP status codes

a) 200 OK

b) 400 Bad Request

c) 301 Moved permanently

d) 304 Not Found

[View Answer](#)

Answer: d

Explanation: 404 Not Found.

11. Which of the following is not correct ?

a) Web cache doesn't have its own disk space

b) Web cache can act both like server and client

c) Web cache might reduce the response time

d) Web cache contains copies of recently requested objects

[View Answer](#)

Answer: a

Explanation: None.

12. The conditional GET mechanism

a) Imposes conditions on the objects to be requested

b) Limits the number of responses from a server

c) Helps to keep a cache up-to-date

d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

13. Which of the following is present in both an HTTP request line and a status line?

- a) HTTP version number
- b) URL
- c) Method
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – Network Utilities

This set of Computer Networks Questions & Answers focuses on “Network Utilities”.

1) Ping can

- a) Measure round-trip time
- b) Report packet loss
- c) Report latency
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

2) Ping sweep is a part of

- a) Traceroute
- b) Nmap
- c) Route
- d) Ipconfig

[View Answer](#)

Answer: b

Explanation: A ping sweep is a method that can establish a range of IP addresses which map to live hosts and are mostly used by network scanning tools like nmap.

3) ICMP is used in

- a) Ping
- b) Traceroute
- c) Ifconfig

d) Both a and b

[View Answer](#)

Answer: d

Explanation: None.

4) _____ command is used to manipulate TCP/IP routing table.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: a

Explanation: None.

5) If you want to find the number of routers between a source and destination, the utility to be used is.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: d

Explanation: None.

6) Which of the following is related to ipconfig in Microsoft Windows ?

- a) Display all current TCP/IP network configuration values
- b) Modify DHCP settings
- c) Modify DNS settings
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

7) This allows to check if a domain is available for registration.

- a) Domain Check
- b) Domain Dossier
- c) Domain Lookup
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

8) Choose the wrong statement

- a) Nslookup is used to query a DNS server for DNS data
- b) Ping is used to check connectivity
- c) Pathping combines the functionality of ping with that of route
- d) Ifconfig can configure TCP/IP network interface parameters

[View Answer](#)

Answer: c

Explanation: Pathping combines the functionality of ping with that of traceroute (tracert).

Computer Networks Questions & Answers – FTP

This set of Computer Networks Questions & Answers focuses on “FTP”.

1) Expansion of FTP is

- a) Fine Transfer Protocol
- b) File Transfer Protocol
- c) First Transfer Protocol
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

2) FTP is built on _____ architecture

- a) Client-server
- b) P2P
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

3) FTP uses _____ parallel TCP connections to transfer a file

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: Control connection and data connection.

4) Identify the incorrect statement

- a) FTP stands for File Transfer Protocol
- b) FTP uses two parallel TCP connections
- c) FTP sends its control information in-band
- d) FTP sends exactly one file over the data connection

[View Answer](#)

Answer: c

Explanation: FTP is out-of-band as it has separate control connection.

5) If 5 files are transferred from server A to client B in the same session. The number of TCP connection between A and B is

- a) 5
- b) 10
- c) 2
- d) 6

[View Answer](#)

Answer: d

Explanation: 1 control connection and other 5 for five file transfers.

6) FTP server

- a) Maintains state
- b) Is stateless
- c) Has single TCP connection for a file transfer
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

7) The commands, from client to server, and replies, from server to client, are sent across the control connection in ____ bit ASCII format

- a) 8
- b) 7
- c) 3
- d) 5

[View Answer](#)

Answer: b

Explanation: None.

8) Find the FTP reply whose message is wrongly matched

- a) 331 – Username OK, password required
- b) 425 – Can't open data connection
- c) 452 – Error writing file
- d) 452 – Can't open data connection

[View Answer](#)

Answer: d

Explanation: None.

9) Mode of data transfer in FTP, where all the is left to TCP

- a) Stream mode
- b) Block mode
- c) Compressed mode
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

10) The password is sent to the server using _____ command

- a) PASSWD
- b) PASS
- c) PASSWORD
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

Computer Networks Questions & Answers – Network Attacks

This set of Computer Networks Questions & Answers focuses on “Network Attacks”.

1) The attackers a network of compromised devices known as

- a) Internet
- b) Botnet
- c) Telnet
- d) D-net

[View Answer](#)

Answer: b

Explanation: None.

2) Which of the following is a form of DoS attack ?

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

3) The DoS attack is which the attacker establishes a large number of half-open or fully open TCP connections at the target host

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: c

Explanation: None.

4)The DoS attack is which the attacker sends deluge of packets to the targeted host

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: b

Explanation: None.

5) Packet sniffers involve

- a) Active receiver
- b) Passive receiver
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: They do not inject packets into the channel.

6) Sniffers can be deployed in

- a) Wired environment
- b) WiFi
- c) Ethernet LAN
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: None.

7) Firewalls are often configured to block

- a) UDP traffic
- b) TCP traffic
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

Computer Networks Questions & Answers – Security In The Internet

This section of our 1000+ Computer Networks MCQs focuses on Security In The Internet.

1. IPSec is designed to provide the security at the
- a) transport layer
 - b) network layer
 - c) application layer
 - d) session layer

[View Answer](#)

Answer:b

Explanation:None.

2. In tunnel mode IPsec protects the
- a) entire IP packet
 - b) IP header
 - c) IP payload
 - d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Network layer firewall works as a
a) frame filter
b) packet filter
c) both (a) and (b)
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. Network layer firewall has two sub-categories as
a) stateful firewall and stateless firewall
b) bit oriented firewall and byte oriented firewall
c) frame firewall and packet firewall
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. WPA2 is used for security in
a) ethernet
b) bluetooth
c) wi-fi
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

6. An attempt to make a computer resource unavailable to its intended users is called
a) denial-of-service attack
b) virus attack
c) worms attack
d) botnet process

[View Answer](#)

Answer:a

Explanation:None.

7. Extensible authentication protocol is authentication framework frequently used in
a) wired personal area network
b) wireless networks

c) wired local area network
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Pretty good privacy (PGP) is used in
a) browser security
b) email security
c) FTP security
d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

9. PGP encrypts data by using a block cipher called
a) international data encryption algorithm
b) private data encryption algorithm
c) intrenet data encryption algorithm
d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called
a) DNS lookup
b) DNS hijacking
c) DNS spoofing
d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Security In The Internet

This section of our 1000+ Computer Networks MCQs focuses on Security In The Internet.

1. IPSec is designed to provide the security at the
a) transport layer

- | | | |
|----|-------------|-------|
| b) | network | layer |
| c) | application | layer |
| d) | session | layer |

[View Answer](#)

Answer:b

Explanation:None.

2. In tunnel mode IPsec protects the packet header payload mentioned
- | | | | |
|----|--------|----|---------------|
| a) | entire | IP | packet |
| b) | | IP | header |
| c) | | IP | payload |
| d) | none | of | the mentioned |

[View Answer](#)

Answer:a

Explanation:None.

3. Network layer firewall works as a filter
- | | | | |
|----|------|--------|---------------|
| a) | | frame | filter |
| b) | | packet | filter |
| c) | both | (a) | and (b) |
| d) | none | of | the mentioned |

[View Answer](#)

Answer:b

Explanation:None.

4. Network layer firewall has two sub-categories as stateful and stateless firewall
- | | | | | | |
|----|--------------|----------|-----|---------------|-----------|
| a) | stateful | firewall | and | stateless | firewall |
| b) | bit oriented | firewall | and | byte oriented | firewall |
| c) | frame | firewall | and | packet | firewall |
| d) | none | of | the | | mentioned |

[View Answer](#)

Answer:a

Explanation:None.

5. WPA2 is used for security in ethernet bluetooth wi-fi
- | | | | |
|----|--|--|-----------|
| a) | | | ethernet |
| b) | | | bluetooth |
| c) | | | wi-fi |

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

6. An attempt to make a computer resource unavailable to its intended users is called

a) denial-of-service attack

b) virus attack

c) worms attack

d) botnet process

[View Answer](#)

Answer:a

Explanation:None.

7. Extensible authentication protocol is authentication framework frequently used in

a) wired personal area network

b) wireless networks

c) local area network

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Pretty good privacy (PGP) is used in

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b) email security

c) FTP security

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

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c) intrenet data encryption algorithm

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called
- a) DNS lookup
 - b) DNS hijacking
 - c) DNS spoofing
 - d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

Computer Networks Questions & Answers – Wireless LAN

This section of our 1000+ Computer Networks MCQs focuses on Wireless LAN.

1. What is the access point (AP) in wireless LAN?

- a) device that allows wireless devices to connect to a wired network
- b) wireless devices itself
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

2. In wireless ad-hoc network

- a) access point is not required
- b) access point is must
- c) nodes are not required
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

3. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA
- c) ALOHA

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

4. In wireless distribution system

a) multiple access point are inter-connected with each other

b) there is no access point

c) only one access point exists

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

5. A wireless network interface controller can work in

a) infrastructure mode

b) ad-hoc mode

c) both (a) and (b)

d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:In infrastructure mode WNIC needs access point but in ad-hoc mode access point is not required.

6. In wireless network an extended service set is a set of

a) connected basic service sets

b) all stations

c) all access points

d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

7. Mostly _____ is used in wireless LAN.

a) time division multiplexing

b) orthogonal frequency division multiplexing

c) space division multiplexing

d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

8. Which one of the following event is not possible in wireless LAN.

- a) collision detection
- b) Acknowledgement of data frames
- c) multi-mode data transmission
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. What is Wired Equivalent Privacy (WEP) ?

- a) security algorithm for ethernet
- b) security algorithm for wireless networks
- c) security algorithm for usb communication
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. What is WPA?

- a) wi-fi protected access
- b) wired protected access
- c) wired process access
- d) wi-fi process access

[View Answer](#)

Answer:a

Explanation:None.

Computer Networks Questions & Answers – WiMAX

This section of our 1000+ Computer Networks MCQs focuses on WiMAX.

1. WiMAX stands for

- a) wireless maximum communication
- b) worldwide interoperability for microwave access
- c) worldwide international standard for microwave access
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

2. WiMAX provides

- a) simplex communication
- b) half duplex communication
- c) full duplex communication
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

3. WiMAX uses the

- a) orthogonal frequency division multiplexing
- b) time division multiplexing
- c) space division multiplexing
- d) all of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

4. Which one of the following modulation scheme is supported by WiMAX?

- a) binary phase shift keying modulation
- b) quadrature phase shift keying modulation
- c) quadrature amplitude modulation
- d) all of the mentioned

[View Answer](#)

Answer:d

Explanation:None.

5. WiMAX MAC layer provides an interface between

- a) higher transport layers and physical layer
- b) application layer and network layer
- c) data link layer and network layer
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

6. For encryption, WiMAX supports

- a) advanced encryption standard
- b) triple data encryption standard
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

7. WiMAX provides

- a) VoIP services
- b) IPTV services
- c) both (a) and (b)
- d) none of the mentioned

[View Answer](#)

Answer:c

Explanation:None.

8. Devices that provide the connectivity to a WiMAX network are known as

- a) subscriber stations
- b) base stations
- c) gateway
- d) none of the mentioned

[View Answer](#)

Answer:a

Explanation:None.

9. WiMAX is mostly used for

- a) local area network
- b) metropolitan area network
- c) personal area network
- d) none of the mentioned

[View Answer](#)

Answer:b

Explanation:None.

10. Which one of the following frequency is not used in WiMAX for communication?

- a) 2.3 GHz
- b) 2.4 GHz

c) 2.5 GHz

d) 3.5 GHz

[View Answer](#)

Answer:b

Explanation:None.

CNS MCQ Question Bank

- What is the hexadecimal equivalent of the Ethernet address 01011010 00010001 01010101 00011000 10101010 00001111?
 - 5A:81:BA:81:AA:0F
 - 5A:11:55:18:AA:0F**
 - 5A:88:AA:18:55:F0
 - 5A:18:5A:18:55:0F
 - _____ uses four pairs of voice-grade, or higher, twisted-pair cable.
 - 100Base-T4**
 - 100Base-FX
 - 100Base-TX
 - none of the above
 - Standard Ethernet (10-Mbps) uses _____ encoding.

CNS MCQ Question Bank

- A) AMI
- B) Manchester**
- C) NRZ
- D) differential Manchester

4. In _____, auto negotiation allows two devices to negotiate the mode or data rate of operation.

- A) Ten-Gigabit Ethernet
- B) Gigabit Ethernet
- C) Fast Ethernet**
- D) Standard

5. If an Ethernet destination address is 08:07:06:05:44:33, then this is a _____ address.

- A) broadcast
- B) unicast**
- C) multicast
- D) any of the above

CNS MCQ Question Bank

6. _____ uses short-wave 850-nm multimode fiber.

A) 10GBase-E

B) 10GBase-L

C) 10GBase-S

D) none of the above

7. Which of the following could not be an Ethernet multicast destination?

A) 7B:AA:C1:23:45:32

B) 7C:56:21:1A:DE:F4

C) 83:32:21:21:4D:34

D) B7:7B:6C:DE:10:00

8. In the Ethernet, the _____ field is actually added at the physical layer and is not (formally) part of the frame.

A) address

CNS MCQ Question Bank

- B) CRC
- C) preamble**
- D) none of the above

9. The purpose of the _____ is to provide flow and error control for the upper-layer protocols that actually demand these services.

- A) LLC**
- B) LLU
- C) MAC
- D) none of the above

10. _____ uses two pairs of twisted-pair cable.

- A) 100Base-T4
- B) 100Base-TX**
- C) 100Base-FX
- D) none of the above

CNS MCQ Question Bank

11. _____ uses fiber-optic cable.
A) 10Base2

B) 10Base-F

C) 10Base-T

D) 10Base5

12. _____ uses 1550-mm single mode fiber.
A) 10GBase-E

B) 10GBase-S

C) 10GBase-L

D) none of the above

13. 1000Base-T uses _____ line coding.
A) MLT-3

B) 4D-PAM5

C) Manchester

CNS MCQ Question Bank

D) 8B6T

14. The maximum frame length for 10-Mbps Ethernet is _____ bytes.

A) 1200

B) 1518

C) 1500

D) none of the above

15. The minimum frame length for 10-Mbps Ethernet is _____ bytes.

A) 128

B) 80

C) 32

D) none of the above

16. _____ uses two optical fibers and a long-wave laser source.

A) 1000Base-T

B) 1000Base-SX

C) 1000Base-LX

CNS MCQ Question Bank

D) none of the above

17. 100Base-FX uses _____ block coding and _____ line coding.

A) 8B/10B; NRZ

B) 4B/5B; MLT-3

C) 8B/10B; MLT-3

D) 4B/5B; NRZ-I

18. Which of the following could not be an Ethernet unicast destination?

A) 46:56:21:1A:DE:F4

B) 43:7B:6C:DE:10:00

C) 48:32:21:21:4D:34

D) 44:AA:C1:23:45:32

19. _____ uses thick coaxial cable.

A) 10Base2

CNS MCQ Question Bank

B) 10Base5

C) 10Base-F

D) 10Base-T

20. _____ uses four twisted-pair cables that connect each station to a common hub.

A) 10Base-F

B) 10Base-T

C) 10Base5

D) 10Base2

21. The original IEEE 802.11, has a data rate of _____ Mbps.

A) 11

B) 22

C) 6

D) 1

22. In IEEE 802.11, when a frame is going from a station to an AP, the address flag is _____.

A) 01

B) 10

C) 11

CNS MCQ Question Bank

D) 00

23. In IEEE 802.11, when a frame is going from one station in a BSS to another without passing through the distribution system, the address flag is _____.

A) 11

B) 00

C) 10

D) 01

24. In IEEE 802.11, the access method used in the PCF sublayer is _____.

A) polling

B) controlled

C) contention

D) none of the above

25. What is the default mask for class A in CIDR notation?

A) /9

B) /8

C) /16

D) none of the above

26. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

A) 12.2.2.0

CNS MCQ Question Bank

B) 12.2.2.96

C) 12.2.2.112

D) none of the above

27. What is the default mask for class B in CIDR notation?

A) /9

B) /8

C) /16

D) none of the above

28. Identify the class of the following IPv4 address: 191.1.2.3.

A) A

B) B

C) C

D) none of the above

29. In IPv6, a _____ address is used if a site with several networks uses the

Internet protocols but is not connected to the Internet for security reasons.

A) link local

B) site local

C) mapped

D) none of the above

30. In IPv6, _____ address defines a group of computers.

A) a unicast

B) a multicast

C) an anycast

CNS MCQ Question Bank

D) none of the above

31. The number of addresses assigned to an organization in classless addressing _____.

A) can be any number

B) must be a multiple of 256

C) must be a power of 2

D) none of the above

32. Find the number of addresses in a block of classless addresses if one of the addresses is 12.2.2.7/30.

A) 2

B) 4

C) 8

D) none of the above

33. In IPv6, _____ address defines a group of computers with addresses that have the same prefix.

A) a unicast

B) a multicast

C) an anycast

D) none of the above

34. An organization is granted a block of classless addresses with the starting address 199.34.76.128/29. How many addresses are granted?

A) 8

B) 16

C) 32

CNS MCQ Question Bank

D) none of the above

35. An organization is granted a block of classless addresses with the starting address 199.34.76.64/28. How many addresses are granted?

A) 8

B) 16

C) 32

D) none of the above

36. An organization is granted a block; one address is 2.2.2.64/20. The organization needs 10 subnets. What is the subnet prefix length?

A) /20

B) /24

C) /25

D) none of the above

37. What is the default mask for class C in CIDR notation?

A) /24

B) /8

C) /16

D) none of the above

38. In hexadecimal colon notation, a 128-bit address is divided into _____ sections, each _____ hexadecimal digits in length.

A) 8: 2

B) 8: 3

C) 8: 4

D) none of the above

CNS MCQ Question Bank

39. In a block, the mask is 255.255.192.0; what is the prefix length?
A) /20

B) /28

C) /18

D) none of the above

40. An organization is granted a block of classless addresses with the starting address 199.34.32.0/27. How many addresses are granted?

A) 8

B) 16

C) 32

D) none of the above

41. Which one is not a contiguous mask?

A) 255.255.255.254

B) 255.255.224.0

C) 255.148.0.0

D) all are

42. To make addresses more readable, IPv6 specifies _____ notation.

A) dotted decimal

B) hexadecimal colon

C) both a and b

D) none of the above

CNS MCQ Question Bank

43. In a block, the prefix length is /15; what is the mask?

A) 255.254.0.0

B) 255.255.255.0

C) 255.255.255.128

D) none of the above

44. An IPv6 address can have up to _____ hexadecimal digits.

A) 16

B) 32

C) 8

D) none of the above

45. In IPv6, a _____ address is an address of 96 bits of zero followed by 32 bits of IPv4 address.

A) link local

B) site local

C) mapped

D) none of the above

46. In classless addressing, the _____ is the varying part (similar to the hostid).

A) suffix

B) prefix

C) hostid

D) none of the above

47. Which address could be the beginning address of a block of 256 classless addresses?

CNS MCQ Question Bank

- A) 2.4.6.5
- B) 2.4.6.15
- C) 2.4.6.0**
- D) none of the above

48.What is the result of ANDing 0 and 15?

- A) 255
- B) 15
- C) 0**
- D) none of the above

49.What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/27?

- A) 12.2.2.0
- B) 12.2.2.32
- C) 12.2.2.64**
- D) none of the above

50.An IPv4 address consists of _____ bits.

- A) 4
- B) 8
- C) 32**
- D) 64

51. In classless addressing, the _____ is another name for the common part of the address range.

- A) suffix**

CNS MCQ Question Bank

B) prefix

C) netid

D) none of the above

52. An IPv6 address is _____ bits long.

A) 32

B) 64

C) 128

D) none of the above

53. The number of addresses in a class A block is _____.

A) 65,534

B) 16,777,216

C) 256

D) none of the above

54. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.6/30?

A) 12.2.2.2

B) 12.2.2.6

C) 12.2.2.7

D) none of the above

55. Which address could be the beginning address of a block of 32 classless addresses?

A) 2.4.6.5

B) 2.4.6.16

CNS MCQ Question Bank

C) 2.4.6.64

D) none of the above

56. In IPv6, a _____ address is used if a LAN uses the Internet protocols but is not connected to the Internet for security reasons.

A) link local

B) site local

C) mapped

D) none of the above

57. What is the result of ANDing 192 and 65?

A) 192

B) 65

C) 64

D) none of the above

58. In IPv4, class _____ has the greatest number of addresses in each block.

A) A

B) B

C) C

D) D

59. The first address assigned to an organization in classless addressing _____.

A) must be a power of 4

B) must be evenly divisible by the number of addresses

C) must belong to one of the A, B, or C classes

CNS MCQ Question Bank

D) none of the above

60. In IPv6, a _____ address comprises 80 bits of zero, followed by 16 bits of one, followed by the 32-bit IPv4 address.

A) link local

B) site local

C) mapped

D) none of the above

61. The number of addresses in a class B block is _____.

A) 65,536

B) 16,777,216

C) 256

D) none of the above

62. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

A) 12.2.2.16

B) 12.2.2.112

C) 12.2.2.127

D) none of the above

63. In IPv6, the _____ prefix defines the purpose of the address.

A) type

B) purpose

C) both a and b

D) none of the above

CNS MCQ Question Bank

64. In a block, the prefix length is /24; what is the mask?

A) 255.255.255.0

B) 255.255.242.0

C) 255.255.0.0

D) none of the above

65. An IPv6 address consists of _____ bytes (octets);

A) 4

B) 8

C) 16

D) none of the above

66. An organization is granted a block; one address is 2.2.2.64/25. If the subnet prefix length is /28, what is the maximum number of subnets?

A) 2

B) 4

C) 8

D) none of the above

CNS MCQ Question Bank

1. The IETF standards documents are called _____

- a) RFC
- b) RCF
- c) ID
- d) DFC

Answer: a

Explanation: RFC stands for Request For Comments and they are documents that describe methods, behaviors, research, or innovations applicable to the working of the Internet.

2. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are _____

- a) Added
- b) Removed
- c) Rearranged
- d) Modified

Answer: a

Explanation: Each layer adds its own header to the packet from the previous layer. For example, in the Internet layer, the IP header is added over the TCP header on the data packet that came from the transport layer.

3. The structure or format of data is called _____

- a) Syntax
- b) Semantics
- c) Struct
- d) Formatting

Answer: a

Explanation: The structure and format of data are defined using syntax. Semantics defines how a particular pattern to be interpreted, and what action is to be taken based on that interpretation. In programming languages, syntax of the instructions plays a vital role in designing of the program.

4. Communication between a computer and a keyboard involves _____ transmission.

- a) Automatic
- b) Half-duplex
- c) Full-duplex
- d) Simplex

Answer: d

Explanation: In simplex transmission, data flows in single direction which in this case refers to the data flowing from the keyboard to the computer. Another example would be of the mouse where the data flows from the mouse to the computer only.

5. The first Network was called _____

- a) CNNET
- b) NSFNET

- c) ASAPNET
- d) ARPANET

Answer: d

Explanation: ARPANET stands for Advanced Research Projects Agency Networks. It was the first network to be implemented which used the TCP/IP protocol in the year 1969.

6. A _____ is the physical path over which a message travels.

- a) Path
- b) Medium
- c) Protocol
- d) Route

Answer: b

Explanation: Messages travel from sender to receiver via a physical path called the medium using a set of methods/rules called protocol. Mediums can be guided (wired) or unguided (wireless).

7. Which organization has authority over interstate and international commerce in the communications field?

- a) ITU-T
- b) IEEE
- c) FCC
- d) ISOC

Answer: c

Explanation: FCC is the abbreviation for Federal Communications Commission. FCC is responsible for regulating all interstate communications originating or terminating in USA. It was founded in the year 1934.

8. Which of this is not a network edge device?

- a) PC
- b) Smartphones
- c) Servers
- d) Switch

Answer: d

Explanation: Network edge devices refer to host systems, which can host applications like web browser. A switch can't operate as a host, but as a central device which can be used to manage network communication.

9. A _____ set of rules that governs data communication.

- a) Protocols
- b) Standards
- c) RFCs
- d) Servers

Answer: a

Explanation: In communications, a protocol refers to a set of rules and regulations that allow a network of nodes to transmit and receive information. Each layer in the network model has a protocol set, for example, the transport layer has TCP and UDP protocols.

10. Three or more devices share a link in _____ connection.

- a) Unipoint
- b) Multipoint
- c) Point to point
- d) Simplex

Answer: b

Explanation: A multipoint communication is established when three or many network nodes are connected to each other. Frame relay, Ethernet and ATM are some examples of multipoint connections.

1. When collection of various computers seems a single coherent system to its client, then it is called _____

- a) computer network
- b) distributed system
- c) networking system
- d) mail system

Answer: b

Explanation: A Computer network is defined as a collection of interconnected computers which uses a single technology for connection.

A distributed system is also the same as computer network but the main difference is that the whole collection of computers appears to its users as a single coherent system.

Example:- World wide web

2. Two devices are in network if _____

- a) a process in one device is able to exchange information with a process in another device
- b) a process is running on both devices
- c) PIDs of the processes running of different devices are same
- d) a process is active and another is inactive

Answer: a

Explanation: A computer network, or data network, is a digital telecommunications network which allows nodes to share resources. In computer networks, computing devices exchange data with each other using connections between nodes. The nodes have certain processes which enable them to share a specific type of data using a distinct protocol.

3. Which of the following computer networks is built on the top of another network?

- a) prior network
- b) chief network
- c) prime network
- d) overlay network

Answer: d

Explanation: An overlay network is a computer network that is built on top of another network. Some examples of an overlay network are Virtual Private Networks (VPN) and Peer-to-Peer Networks (P2P).

4. In computer network nodes are _____

- a) the computer that originates the data
- b) the computer that routes the data
- c) the computer that terminates the data
- d) all of the mentioned

Answer: d

Explanation: In a computer network, a node can be anything that is capable of sending data or receiving data or even routing the data to its destination. Routers, Computers and Smartphones are some examples of network nodes.

5. Communication channel is shared by all the machines on the network in _____

- a) broadcast network
- b) unicast network
- c) multicast network
- d) anycast network

Answer: a

Explanation: In a broadcast network, information is sent to all stations in a network whereas in a multicast network the data or information is sent to a group of stations in the network. In unicast network, information is sent to only one specific station. The broadcast address of the network is the last assigned address of the network.

6. Bluetooth is an example of _____

- a) personal area network
- b) local area network
- c) virtual private network
- d) wide area network

Answer: a

Explanation: Bluetooth is a wireless technology used to create a wireless personal area network for data transfer up to a distance of 10 meters. It operates on 2.45 GHz frequency band for transmission.

7. A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

- a) bridge
- b) firewall
- c) router
- d) hub

Answer: c

Explanation: A router is a networking device that forwards data packets between computer networks. Routers perform the traffic directing functions on the Internet. They make use of routing protocols like RIP to find the cheapest path to the destination.

8. A list of protocols used by a system, one protocol per layer, is called _____

- a) protocol architecture
- b) protocol stack
- c) protocol suite
- d) protocol system

Answer: b

Explanation: A protocol stack refers to a group of protocols that are running concurrently that are employed for the implementation of network protocol suite. Each layer in the network model has to use one specific protocol from the protocol stack.

9. Network congestion occurs _____

- a) in case of traffic overloading
- b) when a system terminates
- c) when connection between two nodes terminates
- d) in case of transfer failure

Answer: a

Explanation: Network congestion occurs when traffic in the network is more than the network could handle. To avoid network congestion, the network management uses various open-loop and closed-loop congestion control techniques.

10. Which of the following networks extends a private network across public networks?

- a) local area network
- b) virtual private network
- c) enterprise private network
- d) storage area network

Answer: b

Explanation: A virtual private network extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. VPN provides enhanced security and online anonymity to users on the internet. It is also used to unblock websites which are unavailable in certain regions.

1. Which of this is not a constituent of residential telephone line?

- a) A high-speed downstream channel
- b) A medium-speed downstream channel
- c) A low-speed downstream channel
- d) An ultra-high speed downstream channel

Answer: c

Explanation: A low-speed downstream channel is not a constituent of a residential telephone line. But it might be just a two-way telephone channel. Internet can be provided through a high-speed downstream channel in a residential telephone line.

2. DSL telcos provide which of the following services?

- a) Wired phone access
- b) ISP
- c) Wired phone access and ISP
- d) Network routing and ISP

Answer: c

Explanation: DSL stands for Digital Subscriber Line and ISP stands for Internet Service Provider. In a Digital Subscriber Line system, the same company which provides phone connection is also an ISP. The internet is provided through the pre-installed telephone lines.

3. The function of DSLAM is to _____

- a) Convert analog signals into digital signals
- b) Convert digital signals into analog signals
- c) Amplify digital signals
- d) De-amplify digital signals

Answer: a

Explanation: DSLAM stands for Digital Subscriber Line Access Multiplexer and it's used by Telcos to convert the analog signals to digital signals for the purpose of providing internet. The DSLAM located in a telco's Central Office does this function.

4. Which of the following terms is not associated with DSL?

- a) DSLAM
- b) CO
- c) Splitter
- d) CMTS

Answer: d

Explanation: CMTS stands for Cable modem termination system. It is used in cable internet access. In cable internet access, internet is not provided through telephone lines and the companies that provide such connections don't necessarily provide telephone access.

5. HFC contains _____

- a) Fibre cable
- b) Coaxial cable
- c) A combination of Fibre cable and Coaxial cable
- d) Twisted Pair Cable

Answer: c

Explanation: Hybrid fiber-coaxial (HFC) is a telecommunications industry term for a broadband

network that combines optical fiber and coaxial cable. It has been popularly used since the early 1990s. It is stronger than the optical fiber cables and faster than the co-axial cables.

6. Which of the following statements is not applicable for cable internet access?

- a) It is a shared broadcast medium
- b) It includes HFCs
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

Answer: d

Explanation: CMTS stands for Cable modem termination system. In cable access analog signal is converted to digital signal by CMTS. In cable internet access, internet is not provided through telephone lines. DSLAM is used by Telecom companies.

7. Among the optical-distribution architectures that are essentially switched ethernet is _____

- a) AON
- b) PON
- c) NON
- d) MON

Answer:a

Explanation: AON stands for Active optical networks which are essentially switched Ethernets. Each user has his/her own dedicated optical fiber line connecting to the ISP in an AON.

8. StarBand provides _____

- a) FTTH internet access
- b) Cable access
- c) Telephone access
- d) Satellite access

Answer: d

Explanation: StarBand was a two-way satellite broadband Internet service available in the U.S. from 2000–2015. It was discontinued from September 30 2015 due to increasing competition from other ISPs.

9. Home Access is provided by _____

- a) DSL
- b) FTTP
- c) Cable
- d) All of the mentioned

Answer: d

Explanation: Home Internet Access is provided by DSL, FTTP, and Cable. FTTP provides the fastest speeds followed by the cable connections and then the DSLs. FTTP is popularly used in modern connections.

10. ONT is connected to splitter using _____

- a) High speed fibre cable

- b) HFC
- c) Optical cable
- d) Twisted pair cable

Answer: c

Explanation: ONT stands for Optical Network Terminal. The ONT connects to the Termination Point (TP) with an optical fibre cable. It translates light signals from the fibre optic line to electric signals that the router can read.

11. Which of the following factors affect transmission rate in DSL?
- a) The gauge of the twisted-pair line
 - b) Degree of electrical interference
 - c) Shadow fading
 - d) The gauge of the twisted-pair line and degree of electrical interference

Answer: d

Explanation: Because DSL is made of twisted wire copper pair, the gauge of twisted pair line i.e. the protection and electrical interference would affect the transmission rate in DSL. Unlike DSL, FTTP is not really affected by these factors.

1. How many layers are present in the Internet protocol stack (TCP/IP model)?
- a) 5
 - b) 7
 - c) 6
 - d) 10

Answer: a

Explanation: There are five layers in the Internet Protocol stack. The five layers in Internet Protocol stack is Application, Transport, Network, Data link and Physical layer. The internet protocol stack model is also called the TCP/IP model and it's used in modern Internet Communication.

2. The number of layers in ISO OSI reference model is _____
- a) 5
 - b) 7
 - c) 6
 - d) 10

Answer: b

Explanation: The seven layers in ISO OSI reference model is Application, Presentation, Session, Transport, Network, Data link and Physical layer. OSI stands for Open System Interconnect and it is a generalized model.

3. Which of the following layers is an addition to OSI model when compared with TCP IP model?
- a) Application layer
 - b) Presentation layer
 - c) Session layer

d) Session and Presentation layer

Answer: d

Explanation: The only difference between OSI model and TCP/IP model is that the functions of Presentation and Session layer in the OSI model are handled by the transport layer itself in TCP/IP. OSI is a generalized model and TCP/IP is an application specific model.

4. Application layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Packet transport

Answer: a

Explanation: Not only application layer, but presentation layer, session layer and transport layer are also implemented in the end system. The layers below are implemented outside the end system, for example, the network layer is implemented on the routers and the physical layer is implemented for the medium.

5. Transport layer is implemented in _____

- a) End system
- b) NIC
- c) Ethernet
- d) Signal transmission

Answer: a

Explanation: Application, Presentation, Session and Transport layer are implemented in the end system. The transport layer handles the process to process delivery of the packet through ports.

6. The functionalities of the presentation layer include _____

- a) Data compression
- b) Data encryption
- c) Data description
- d) All of the mentioned

Answer: d

Explanation: Some functions of the presentation layer include character-code translation, data conversion, data encryption and decryption, and data translation. It connects the application layer with the layers below converting the human readable text and media to machine readable format and vice-versa.

7. Delimiting and synchronization of data exchange is provided by _____

- a) Application layer
- b) Session layer
- c) Transport layer
- d) Link layer

Answer: b

Explanation: The session layer provides the mechanism for opening, closing and managing a session between end-user application processes. The session layer is responsible for establishing, managing, synchronizing and terminating sessions. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

8. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is

-
- a) Application layer
 - b) Transport layer
 - c) Link layer
 - d) Session layer

Answer: d

Explanation: In OSI reference model, the fifth layer is Session layer. Session layer provides the mechanism for opening, closing and managing a session between end-user application processes. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

9. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is

-
- a) Application layer
 - b) Transport layer
 - c) Link layer
 - d) Session layer

Answer: a

Explanation: In TCP/IP model, the fifth layer is application layer. When data is sent from device A to device B, the 5th layer to receive data at B is application layer. Application layer provides the interface between applications and the network. The user interacts with only this layer.

10. In the OSI model, as a data packet moves from the lower to the upper layers, headers are

-
- a) Added
 - b) Removed
 - c) Rearranged
 - d) Randomized

Answer: b

Explanation: In OSI reference model, when data packet moves from lower layers to higher layer, headers get removed. Whereas when the data packet moves from higher layer to lower layers, headers are added. These headers contain the essential control information for the protocols used on the specific layer.

11. Which of the following statements can be associated with OSI model?

- a) A structured way to discuss and easier update system components
- b) One layer may duplicate lower layer functionality
- c) Functionality at one layer no way requires information from another layer

d) It is an application specific network model

Answer: c

Explanation: One layer may use the information from another layer, for example timestamp value. The information is contained in the header inserted by the previous layer. The headers are added as the packet moves from higher layers to the lower layers.

1. OSI stands for _____

- a) open system interconnection
- b) operating system interface
- c) optical service implementation
- d) open service Internet

Answer: a

Explanation: OSI is the abbreviation for Open System Interconnection. OSI model provides a structured plan on how applications communicate over a network, which also helps us to have a structured plan for troubleshooting. It is recognized by the ISO as the generalized model for computer network i.e. it can be modified to design any kind of computer network.

2. The number of layers in ISO OSI reference model is _____

- a) 4
- b) 5
- c) 6
- d) 7

Answer: d

Explanation: In OSI reference model, there are 7 layers namely Application, Presentation, Session, Transport, Network, Data Link and Physical layer. Each layer uses a protocol to perform its designated function, for example, the data link layer uses error detection protocols for error control functions.

3. TCP/IP model does not have _____ layer but OSI model have this layer.

- a) session layer
- b) transport layer
- c) application layer
- d) network layer

Answer: a

Explanation: In OSI reference model, there are two layers which are not present in TCP/IP model. They are Presentation and Session layer. The functions of Presentation and Session layer in the OSI model are handled by the transport layer itself in TCP/IP.

4. Which layer is used to link the network support layers and user support layers?

- a) session layer
- b) data link layer
- c) transport layer

d) network layer

Answer: c

Explanation: Physical, data link and network layers are network support layers and session, presentation and application layers are user support layers. The transport layer links these layers by segmenting and rearranging the data. It uses protocols like TCP and UDP.

5. Which address is used on the internet for employing the TCP/IP protocols?

- a) physical address and logical address
- b) port address
- c) specific address
- d) all of the mentioned

Answer: d

Explanation: The physical, logical, port and specific addresses are used in TCP/IP protocol. All the addressing schemes, that is physical (MAC) and logical address, port address and specific address are employed in both TCP/IP model and OSI model. In TCP/IP, the addresses are more focused on the internet implementation of these addresses.

6. TCP/IP model was developed _____ the OSI model.

- a) prior to
- b) after
- c) simultaneous to
- d) with no link to

Answer: a

Explanation: Several TCP/IP prototypes were developed at multiple research centers between 1978 and 1983, whereas OSI reference model was developed in the year 1984. TCP/IP was developed with the intention to create a model for the Internet while OSI was intended to be a general network model.

7. Which layer is responsible for process to process delivery in a general network model?

- a) network layer
- b) transport layer
- c) session layer
- d) data link layer

Answer: b

Explanation: The role of Transport layer (Layer 4) is to establish a logical end to end connection between two systems in a network. The protocols used in Transport layer is TCP and UDP. The transport layer is responsible for segmentation of the data. It uses ports for the implementation of process-to-process delivery.

8. Which address is used to identify a process on a host by the transport layer?

- a) physical address
- b) logical address
- c) port address

d) specific address

Answer: c

Explanation: A port number is a way to identify a specific process to which an Internet or other network message is to be forwarded when it arrives at a server. Some examples of port numbers are port 20 which is used for FTP data, port 22 which is used for SSH remote login ,and port 23 which is used for TELNET.

9. Which layer provides the services to user?

- a) application layer
- b) session layer
- c) presentation layer
- d) physical layer

Answer: a

Explanation: In networking, a user mainly interacts with application layer to create and send information to other computer or network. Application layer provides the interface between applications and the network. It is the top-most layer in both the TCP/IP and the OSI model.

10. Transmission data rate is decided by _____

- a) network layer
- b) physical layer
- c) data link layer
- d) transport layer

Answer: b

Explanation: Physical layer is a layer 1 device which deals with network cables or the standards in use like connectors, pins, electric current used etc. Basically the transmission speed is determined by the cables and connectors used. Hence it is physical layer that determines the transmission speed in network. Some of the cables used for high speed data transmission are optical fiber cables and twisted pair cables.

1. The physical layer is concerned with _____

- a) bit-by-bit delivery
- b) process to process delivery
- c) application to application delivery
- d) port to port delivery

Answer: a

Explanation: Physical layer deals with bit to bit delivery in networking. The data unit in the physical layer is bits. Process to process delivery or the port to port delivery is dealt in the transport layer. The various transmission mediums aid the physical layer in performing its functions.

2. Which transmission media provides the highest transmission speed in a network?

- a) coaxial cable
- b) twisted pair cable
- c) optical fiber

d) electrical cable

Answer: c

Explanation: Fiber optics is considered to have the highest transmission speed among the all mentioned above. The fiber optics transmission runs at 1000Mb/s. It is called as 1000Base-Lx whereas IEEE standard for it is 802.3z. It is popularly used for modern day network connections due to its high transmission rate.

3. Bits can be sent over guided and unguided media as analog signal by _____

- a) digital modulation
- b) amplitude modulation
- c) frequency modulation
- d) phase modulation

Answer: a

Explanation: In analog modulation, digital low frequency baseband signal (digital bit stream) is transmitted over a higher frequency. Whereas in digital modulation the only difference is that the base band signal is of discrete amplitude level. The bits are represented by only two frequency levels, one for high and one for low.

4. The portion of physical layer that interfaces with the media access control sublayer is called _____

- a) physical signalling sublayer
- b) physical data sublayer
- c) physical address sublayer
- d) physical transport sublayer

Answer: a

Explanation: The portion of physical layer that interfaces with the medium access control sublayer is Physical Signaling Sublayer. The main function of this layer is character encoding, reception, decoding and performs optional isolation functions. It handles which media connection the signal should be forwarded to physically.

5. The physical layer provides _____

- a) mechanical specifications of electrical connectors and cables
- b) electrical specification of transmission line signal level
- c) specification for IR over optical fiber
- d) all of the mentioned

Answer: d

Explanation: Anything dealing with a network cable or the standards in use – including pins, connectors and the electric current used is dealt in the physical layer (Layer 1). Physical layer deals with bit to bit delivery of the data aided by the various transmission mediums.

6. In asynchronous serial communication the physical layer provides _____

- a) start and stop signalling
- b) flow control

- c) both start & stop signalling and flow control
- d) only start signalling

Answer: c

Explanation: In asynchronous serial communication, the communication is not synchronized by clock signal. Instead of a start and stop signaling and flow control method is followed. Unlike asynchronous serial communication, in synchronous serial communication a clock signal is used for communication, so the start and stop method is not really required.

7. The physical layer is responsible for _____

- a) line coding
- b) channel coding
- c) modulation
- d) all of the mentioned

Answer: d

Explanation: The physical layer is responsible for line coding, channel coding and modulation that is needed for the transmission of the information. The physical configuration including pins, connectors and the electric current used is dealt in the physical layer based on the requirement of the network application.

8. The physical layer translates logical communication requests from the _____ into hardware specific operations.

- a) data link layer
- b) network layer
- c) trasnport layer
- d) application layer

Answer: a

Explanation: Physical layer accepts data or information from the data link layer and converts it into hardware specific operations so as to transfer the message through physical cables. Some examples of the cables used are optical fiber cables, twisted pair cables and co-axial cables.

9. A single channel is shared by multiple signals by _____

- a) analog modulation
- b) digital modulation
- c) multiplexing
- d) phase modulation

Answer: c

Explanation: In communication and computer networks, the main goal is to share a scarce resource. This is done by multiplexing, where multiple analog or digital signals are combined into one signal over a shared medium. The multiple kinds of signals are designated by the transport layer which is the layer present on a higher level than the physical layer.

10. Wireless transmission of signals can be done via _____

- a) radio waves

- b) microwaves
- c) infrared
- d) all of the mentioned

Answer: d

Explanation: Wireless transmission is carried out by radio waves, microwaves and IR waves. These waves range from 3 KHz to above 300 GHz and are more suitable for wireless transmission. Radio waves can penetrate through walls and are used in radio communications, microwaves and infrared (IR) waves cannot penetrate through walls and are used for satellite communications and device communications respectively.

1. The data link layer takes the packets from _____ and encapsulates them into frames for transmission.
 - a) network layer
 - b) physical layer
 - c) transport layer
 - d) application layer

Answer: a

Explanation: In computer networks, the data from application layer is sent to transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits. Error control and flow control data is inserted in the frames at the data link layer.

2. Which of the following tasks is not done by data link layer?
 - a) framing
 - b) error control
 - c) flow control
 - d) channel coding

Answer: d

Explanation: Channel coding is the function of physical layer. Data link layer mainly deals with framing, error control and flow control. Data link layer is the layer where the packets are encapsulated into frames.

3. Which sublayer of the data link layer performs data link functions that depend upon the type of medium?
 - a) logical link control sublayer
 - b) media access control sublayer
 - c) network interface control sublayer
 - d) error control sublayer

Answer: b

Explanation: Media access control (MAC) deals with transmission of data packets to and from the network-interface card, and also to and from another remotely shared channel. The MAC sublayer also prevents collision using protocols like CSMA/CD.

4. Header of a frame generally contains _____

- a) synchronization bytes
- b) addresses
- c) frame identifier
- d) all of the mentioned

Answer: d

Explanation: In a frame, the header is a part of the data that contains all the required information about the transmission of the file. It contains information like synchronization bytes, addresses, frame identifier etc. It also contains error control information for reducing the errors in the transmitted frames.

5. Automatic repeat request error management mechanism is provided by _____

- a) logical link control sublayer
- b) media access control sublayer
- c) network interface control sublayer
- d) application access control sublayer

Answer: a

Explanation: The logical link control is a sublayer of data link layer whose main function is to manage traffic, flow and error control. The automatic repeat request error management mechanism is provided by the LLC when an error is found in the received frame at the receiver's end to inform the sender to re-send the frame.

6. When 2 or more bits in a data unit has been changed during the transmission, the error is called _____

- a) random error
- b) burst error
- c) inverted error
- d) double error

Answer: b

Explanation: When a single bit error occurs in a data, it is called single bit error. When more than a single bit of data is corrupted or has error, it is called burst error. If a single bit error occurs, the bit can be simply repaired by inverting it, but in case of a burst error, the sender has to send the frame again.

7. CRC stands for _____

- a) cyclic redundancy check
- b) code repeat check
- c) code redundancy check
- d) cyclic repeat check

Answer: a

Explanation: Cyclic redundancy check is a code that is added to a data which helps us to identify any error that occurred during the transmission of the data. CRC is only able to detect errors, not correct them. CRC is inserted in the frame trailer.

8. Which of the following is a data link protocol?

- a) ethernet
- b) point to point protocol
- c) hdlc
- d) all of the mentioned

Answer: d

Explanation: There are many data link layer protocols. Some of them are SDLC (synchronous data link protocol), HDLC (High level data link control), SLIP (serial line interface protocol), PPP (Point to point protocol) etc. These protocols are used to provide the logical link control function of the Data Link Layer.

9. Which of the following is the multiple access protocol for channel access control?

- a) CSMA/CD
- b) CSMA/CA
- c) Both CSMA/CD & CSMA/CA
- d) HDLC

Answer: c

Explanation: In CSMA/CD, it deals with detection of collision after collision has occurred, whereas CSMA/CA deals with preventing collision. CSMA/CD is abbreviation for Carrier Sensing Multiple Access/Collision detection. CSMA/CA is abbreviation for Carrier Sensing Multiple Access/Collision Avoidance. These protocols are used for efficient multiple channel access.

10. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called _____

- a) piggybacking
- b) cyclic redundancy check
- c) fletcher's checksum
- d) parity check

Answer: a

Explanation: Piggybacking is a technique in which the acknowledgment is temporarily delayed so as to be hooked with the next outgoing data frame. It saves a lot of channel bandwidth as in non-piggybacking system, some bandwidth is reserved for acknowledgement.

1. The network layer is concerned with _____ of data.

- a) bits
- b) frames
- c) packets
- d) bytes

Answer: c

Explanation: In computer networks, the data from the application layer is sent to the transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits.

2. Which one of the following is not a function of network layer?

- a) routing
- b) inter-networking
- c) congestion control
- d) error control

Answer: d

Explanation: In the OSI model, network layer is the third layer and it provides data routing paths for network communications. Error control is a function of the data link layer and the transport layer.

3. A 4 byte IP address consists of _____

- a) only network address
- b) only host address
- c) network address & host address
- d) network address & MAC address

Answer: c

Explanation: An ip address which is 32 bits long, that means it is of 4 bytes and is composed of a network and host portion and it depends on address class. The size of the host address and network address depends upon the class of the address in classful IP addressing.

4. In virtual circuit network each packet contains _____

- a) full source and destination address
- b) a short VC number
- c) only source address
- d) only destination address

Answer: b

Explanation: A short VC number also called as VCID (virtual circuit identifier) is a type of identifier which is used to distinguish between several virtual circuits in a connection oriented circuit switched network. Each virtual circuit is used to transfer data over a larger packet switched network.

5. Which of the following routing algorithms can be used for network layer design?

- a) shortest path algorithm
- b) distance vector routing
- c) link state routing
- d) all of the mentioned

Answer: d

Explanation: The routing algorithm is what decides where a packet should go next. There are several routing techniques like shortest path algorithm, static and dynamic routing, decentralized routing, distance vector routing, link state routing, Hierarchical routing etc. The routing algorithms go hand in hand with the operations of all the routers in the networks. The routers are the main participants in these algorithms.

6. Which of the following is not correct in relation to multi-destination routing?

- a) is same as broadcast routing

- b) contains the list of all destinations
- c) data is not sent by packets
- d) there are multiple receivers

Answer: c

Explanation: In multi-destination routing, there is more than one receiver and the route for each destination which is contained in a list of destinations is to be found by the routing algorithm. Multi-destination routing is also used in broadcasting.

7. A subset of a network that includes all the routers but contains no loops is called _____

- a) spanning tree
- b) spider structure
- c) spider tree
- d) special tree

Answer: a

Explanation: Spanning tree protocol (STP) is a network protocol that creates a loop free logical topology for ethernet networks. It is a layer 2 protocol that runs on bridges and switches. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network.

8. Which one of the following algorithm is not used for congestion control?

- a) traffic aware routing
- b) admission control
- c) load shedding
- d) routing information protocol

Answer: d

Explanation: The Routing Information Protocol (RIP) is used by the network layer for the function of dynamic routing. Congestion control focuses on the flow of the traffic in the network and uses algorithms like traffic aware routing, admission control and load shedding to deal with congestion.

9. The network layer protocol for internet is _____

- a) ethernet
- b) internet protocol
- c) hypertext transfer protocol
- d) file transfer protocol

Answer: b

Explanation: There are several protocols used in Network layer. Some of them are IP, ICMP, CLNP, ARP, IPX, HRSP etc. Hypertext transfer protocol is for application layer and ethernet protocol is for data link layer.

10. ICMP is primarily used for _____

- a) error and diagnostic functions
- b) addressing
- c) forwarding

d) routing

Answer: a

Explanation: ICMP abbreviation for Internet Control Message Protocol is used by networking devices to send error messages and operational information indicating a host or router cannot be reached. ICMP operates over the IP packet to provide error reporting functionality as IP by itself cannot report errors.

1. Transport layer aggregates data from different applications into a single stream before passing it to _____

- a) network layer
- b) data link layer
- c) application layer
- d) physical layer

Answer: a

Explanation: The flow of data in the OSI model flows in following manner Application -> Presentation -> Session -> Transport -> Network -> Data Link -> Physical. Each and every layer has its own set of functions and protocols to ensure efficient network performance.

2. Which of the following are transport layer protocols used in networking?

- a) TCP and FTP
- b) UDP and HTTP
- c) TCP and UDP
- d) HTTP and FTP

Answer: c

Explanation: Both TCP and UDP are transport layer protocol in networking. TCP is an abbreviation for Transmission Control Protocol and UDP is an abbreviation for User Datagram Protocol. TCP is connection oriented whereas UDP is connectionless.

3. User datagram protocol is called connectionless because _____

- a) all UDP packets are treated independently by transport layer
- b) it sends data as a stream of related packets
- c) it is received in the same order as sent order
- d) it sends data very quickly

Answer: a

Explanation: UDP is an alternative for TCP and it is used for those purposes where speed matters most whereas loss of data is not a problem. UDP is connectionless whereas TCP is connection oriented.

4. Transmission control protocol _____

- a) is a connection-oriented protocol
- b) uses a three way handshake to establish a connection
- c) receives data from application as a single stream

d) all of the mentioned

Answer: d

Explanation: TCP provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network. Major internet applications like www, email, file transfer etc rely on TCP. TCP is connection oriented and it is optimized for accurate delivery rather than timely delivery.

5. An endpoint of an inter-process communication flow across a computer network is called _____

- a) socket
- b) pipe
- c) port
- d) machine

Answer: a

Explanation: Socket is one end point in a two way communication link in the network. TCP layer can identify the application that data is destined to be sent by using the port number that is bound to socket.

6. Socket-style API for windows is called _____

- a) wsock
- b) winsock
- c) wins
- d) sockwi

Answer: b

Explanation: Winsock is a programming interface which deals with input output requests for internet applications in windows OS. It defines how windows network software should access network services.

7. Which one of the following is a version of UDP with congestion control?

- a) datagram congestion control protocol
- b) stream control transmission protocol
- c) structured stream transport
- d) user congestion control protocol

Answer: a

Explanation: The datagram congestion control is a transport layer protocol which deals with reliable connection setup, teardown, congestion control, explicit congestion notification, and feature negotiation. It is used in modern day systems where there are really high chances of congestion. The protocol was last updated in the year 2008.

8. A _____ is a TCP name for a transport service access point.

- a) port
- b) pipe
- c) node

d) protocol

Answer: a

Explanation: Just as the IP address identifies the computer, the network port identifies the application or service running on the computer. A port number is 16 bits. The combination of IP address preceded with the port number is called the socket address.

9. Transport layer protocols deals with _____

- a) application to application communication
- b) process to process communication
- c) node to node communication
- d) man to man communication

Answer: b

Explanation: Transport layer is 4th layer in TCP/IP model and OSI reference model. It deals with logical communication between process. It is responsible for delivering a message between network host.

10. Which of the following is a transport layer protocol?

- a) stream control transmission protocol
- b) internet control message protocol
- c) neighbor discovery protocol
- d) dynamic host configuration protocol

Answer: a

Explanation: The Stream Control Transmission Protocol (SCTP) is a transport layer protocol used in networking system where streams of data are to be continuously transmitted between two connected network nodes. Some of the other transport layer protocols are RDP, RUDP, TCP, DCCP, UDP etc.

1. Physical or logical arrangement of network is _____

- a) Topology
- b) Routing
- c) Networking
- d) Control

Answer: a

Explanation: Topology in networks is the structure or pattern in which each and every node in the network is connected. There are many topologies in networking like bus, tree, ring, star, mesh, and hybrid topology. There is no particular best topology and a suitable topology can be chosen based on the kind of application of the network .

2. Which network topology requires a central controller or hub?

- a) Star
- b) Mesh
- c) Ring

d) Bus

Answer: a

Explanation: In star topology, no computer is connected to another computer directly but all the computers are connected to a central hub. Every message sent from a source computer goes through the hub and the hub then forwards the message only to the intended destination computer.

3. _____ topology requires a multipoint connection.

- a) Star
- b) Mesh
- c) Ring
- d) Bus

Answer: d

Explanation: In bus topology, there is a single cable to which all the network nodes are connected. So whenever a node tries to send a message or data to other nodes, this data passes through all other nodes in the network through the cable. It is really simple to install but it's not secure enough to be used in most of the computer network applications.

4. Data communication system spanning states, countries, or the whole world is _____

- a) LAN
- b) WAN
- c) MAN
- d) PAN

Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. WANs are used to connect cities, states or even countries. A wireless connection is required to build a WAN. The best example of WAN is the Internet.

5. Data communication system within a building or campus is_____

- a) LAN
- b) WAN
- c) MAN
- d) PAN

Answer: a

Explanation: LAN is an abbreviation for Local Area Network. This network interconnects computers in a small area such as schools, offices, residence etc. It is the most versatile kind of data communication system where most of the computer network concepts can be visibly used.

6. WAN stands for _____

- a) World area network
- b) Wide area network
- c) Web area network
- d) Web access network

Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. These are used to connect cities, states or even countries. They can be connected through leased lines or satellites.

7. In TDM, slots are further divided into _____

- a) Seconds
- b) Frames
- c) Packets
- d) Bits

Answer: b

Explanation: TDM is the abbreviation for Time division multiplexing. It is technique for combining several low rate channels to a single high rate channel. For a certain time slot, the several channels could use the maximum bandwidth. Each channel is inactive for a period of time too. Some other multiplexing techniques are Frequency division multiplexing and Phase division multiplexing.

8. _____ is the multiplexing technique that shifts each signal to a different carrier frequency.

- a) FDM
- b) TDM
- c) Both FDM & TDM
- d) PDM

Answer: a

Explanation: FDM is an abbreviation for Frequency Division Multiplexing. This technique is used when the bandwidth of the channel is greater than the combined bandwidth of all the signals which are to be transmitted. The channel is active at all times unless a collision occurs with another channel trying to use the same frequency. Some other multiplexing techniques are Time division multiplexing and Phase division multiplexing.

1. The sharing of a medium and its link by two or more devices is called _____

- a) Fully duplexing
- b) Multiplexing
- c) Microplexing
- d) Duplexing

Answer: b

Explanation: Multiplexing is a method using which one can send multiples signals through a shared medium at the same time. This helps in using less resources and thus saving the cost of sending messages.

2. Multiplexing is used in _____

- a) Packet switching
- b) Circuit switching
- c) Data switching
- d) Packet & Circuit switching

Answer: b

Explanation: Circuit switching is a switching method by which one can obtain a physical path between end points. Circuit switching method is also called a connection oriented network. Two nodes must be physically and logically connected to each other to create a circuit switching network.

3. Which multiplexing technique used to transmit digital signals?

- a) FDM
- b) TDM
- c) WDM
- d) FDM & WDM

Answer: b

Explanation: TDM abbreviation for Time Division Multiplexing is a method used for digital signals. Whereas FDM and WDM abbreviation for Frequency Division Multiplexing, and Wavelength Division Multiplexing, are used for analog signals. TDM is used in applications like ISDN (Integrated Services Digital Network) and PSTN (Public Switched Telephone Network).

4. If there are n signal sources of same data rate, then the TDM link has _____ slots.

- a) n
- b) $n/2$
- c) n^2
- d) 2^n

Answer: a

Explanation: In TDM, the total unit of time is divided equally among all the signal sources and each and every source has access to the complete channel bandwidth during its allotted time slot. When the time slot of the source is not active, it remains idle and waits for its slot to begin.

5. If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is _____

- a) 32kbps
- b) 500bps
- c) 500kbps
- d) 32bps

Answer: a

Explanation: Transmission rate = frame rate * number of bits in a slot.

Given: Frame rate = 4000/sec and number of bits in slot = 8

Thus, Transmission rate = $(4000 * 8)$ bps

$$\begin{aligned} &= 32000 \text{bps} \\ &= 32 \text{kbps} \end{aligned}$$

6. The state when dedicated signals are idle are called _____

- a) Death period
- b) Poison period
- c) Silent period
- d) Stop period

Answer: c

Explanation: There are instances when connection between two endpoints has been established, but no communication or transfer of messages occurs. This period of time is called silent period. The silent period ends when either of the two endpoints starts the communication.

7. Multiplexing provides _____

- a) Efficiency
- b) Privacy
- c) Anti jamming
- d) Both Efficiency & Privacy

Answer: d

Explanation: Multiplexing helps us to transfer our messages over a shared channel. This brings up the issue of privacy and efficiency. Fortunately, Multiplexing has high efficiency and high privacy when implemented because in the implementation, the transport layer of the OSI network model handles the function of multiplexing through interfaces called ports which provide the required efficiency and privacy.

8. In TDM, the transmission rate of a multiplexed path is always _____ the sum of the transmission rates of the signal sources.

- a) Greater than
- b) Lesser than
- c) Equal to
- d) Equal to or greater than

Answer: a

Explanation: In TDM the transmission rate provided by the path that is multiplexed will always be greater than the sum of transmission rates of the single sources. This happens because the transmission rate is provided to each source only for a small period of time.

9. In TDM, slots are further divided into _____

- a) Seconds
- b) Frames
- c) Packets
- d) Bits

Answer: b

Explanation: TDM is the abbreviation for Time division multiplexing. It is technique for combining several low rate channels to a single high rate channel. For a certain time slot, the several channels could use the maximum bandwidth. Each channel is inactive for a period of time too. Some other multiplexing techniques are Frequency division multiplexing and Phase division multiplexing.

1. Which of the following delay is faced by the packet in travelling from one end system to another?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) All of the mentioned

Answer: d

Explanation: When a packet has to travel from one end system to another, it first faces the queuing delay when there are multiple packets which are to be sent, then it faces the transmission delay to convert the packet into bits to be transmitted, and then it faces the propagation delay to propagate the bits through the physical medium.

2. For a 10Mbps Ethernet link, if the length of the packet is 32bits, the transmission delay is _____ (in microseconds)

- a) 3.2
- b) 32
- c) 0.32
- d) 320

Answer: a

Explanation: Transmission rate = length / transmission rate = $32/10 = 3.2$ microseconds.

3. The time required to examine the packet's header and determine where to direct the packet is part of _____

- a) Processing delay
- b) Queuing delay
- c) Transmission delay
- d) Propagation delay

Answer: a

Explanation: Processing delay is induced at a router's or other network processor's end in the path of the packet and is caused by the time taken by the processor to examine the packet's header to decide the further path of the packet.

4. Given L = number of bits in the packet, a = average rate and R = transmission rate. The Traffic intensity in the network is given by _____

- a) La/R
- b) LR/a
- c) R/La
- d) Ra/L

Answer: a

Explanation: Traffic Intensity = (Number of bits in packet * Average Transmission rate)/Current Transmission rate.

5. In the transfer of file between server and client, if the transmission rates along the path is 10Mbps, 20Mbps, 30Mbps, 40Mbps. The throughput is usually _____

- a) 20Mbps
- b) 10Mbps
- c) 40Mbps
- d) 50Mbps

Answer: b

Explanation: The throughput is generally the transmission rate of bottleneck link.

6. If end to end delay is given by $d_{end-end} = N(d_{proc} + d_{trans} + d_{prop})$ is a non congested network. The number of routers between source and destination is?

- a) $N/2$
- b) N
- c) $N-1$
- d) $2N$

Answer: c

Explanation: In the equation $N (d_{proc} + d_{trans} + d_{prop})$, N is the number of checkpoints/stops that the packet makes as it reaches the destination. The stops are made at each router and the final destination node. Now, since $N = \text{number of routers} + \text{final node}$, then $\text{number of routers} = N - \text{final node}$. As we know, there is only 1 final node in a path, thus, $\text{number of routers} = N - 1$. Suppose, There is a path $A \rightarrow R_1 \rightarrow R_2 \rightarrow B$ for a packet where A is the source node, B is the final node and R_1 and R_2 are routers. The total delay would be given by $N (d_{proc} + d_{trans} + d_{prop})$ where $N = 3$, since the packet would stop at R_1 , R_2 and B . The number of routers here are 2, and $(N - 1)$ is also 2.

7. The total nodal delay is given by _____

- a) $d_{nodal} = d_{proc} - d_{queue} + d_{trans} + d_{prop}$
- b) $d_{nodal} = d_{proc} + d_{trans} - d_{queue}$
- c) $d_{nodal} = d_{proc} + d_{queue} + d_{trans} + d_{prop}$
- d) $d_{nodal} = d_{proc} + d_{queue} - d_{trans} - d_{prop}$

Answer: c

Explanation: The total node-to-node delay, that is, nodal delay is the sum of all, the processing delay, queuing delay, transmission delay and propagation delay. Ideally, the nodal delay must be low as possible for a better Quality of Service of the network.

8. In a network, If P is the only packet being transmitted and there was no earlier transmission, which of the following delays could be zero?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) Processing delay

Answer: b

Explanation: Since there is no other packet to be transmitted, there is no need for a queue. Therefore, the delay caused due to the queuing would be none i.e. 0.

9. Transmission delay does not depend on _____

- a) Packet length
- b) Distance between the routers
- c) Transmission rate
- d) Bandwidth of medium

Answer: b

Explanation: Transmission delay = packet length / transmission rate. The transmission rate depends upon the bandwidth of the medium.

10. Propagation delay depends on _____

- a) Packet length
- b) Transmission rate
- c) Distance between the routers
- d) Speed of the CPU

Answer: c

Explanation: Propagation delay is caused when the packet is in its electric signal form and is travelling through a medium (a wire or a electromagnetic wave). Propagation delay is the time it takes a bit to propagate from one router to the next. If the distance between the routers is increased, it will take longer time to propagate, that is, there would be more propagation delay.

1. The attacker using a network of compromised devices is known as _____

- a) Internet
- b) Botnet
- c) Telnet
- d) D-net

Answer: b

Explanation: Botnet is a network of compromised devices used by the attacker without the owner's knowledge to perform unethical activities such as spamming. The attacker usually uses the least secure devices to create the botnet.

2. Which of the following is a form of DoS attack?

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

Answer: d

Explanation: In a DoS attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. In vulnerability attack, the attacker exploits any obvious vulnerable entity in the network to deny the victim access into the network. In bandwidth flooding, the attacker floods the victim with a huge flow of packets and uses up all the bandwidth. In connection flooding, the attacker floods the victim network with a huge number of connections, so that, no other machine can connect to it.

3. The DoS attack, in which the attacker establishes a large number of half-open or fully open TCP connections at the target host is _____

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) UDP flooding

Answer: c

Explanation: In Vulnerability attack, the attacker exploits the vulnerable control points of the network to deny access to the victims. In Bandwidth flooding, the attacker intentionally uses up all the bandwidth by flooding the victim with a deluge of packets and makes sure that the victim can't use any bandwidth. In UDP flooding, too many UDP packets are sent by the attacker to the victim at random ports.

4. The DoS attack, in which the attacker sends deluge of packets to the targeted host is _____
- a) Vulnerability attack
 - b) Bandwidth flooding
 - c) Connection flooding
 - d) UDP flooding

Answer: b

Explanation: In Bandwidth flooding, the attacker floods the victim machine with a deluge of packets to make sure that no bandwidth is available. The victim then cannot utilize the complete bandwidth to perform its operation.

5. Packet sniffers involve _____
- a) Active receiver
 - b) Passive receiver
 - c) Legal receiver
 - d) Partially-active receiver

Answer: b

Explanation: The function of packet sniffers is to just silently receive the packets flowing in the channel. If they inject any packets into the channel, they might alert the other users about the intrusion.

6. Sniffers can be prevented by using _____
- a) Wired environment
 - b) WiFi
 - c) Ethernet LAN
 - d) Switched network

Answer: d

Explanation: Switches make sure that the packet is sent to the intended receiver and no one else, thus preventing Sniffers to perform their function. Intelligent switches are hence used preferably for the network.

7. Firewalls are often configured to block _____
- a) UDP traffic
 - b) TCP traffic
 - c) Sensitive traffic
 - d) Best-effort traffic

Answer: a

Explanation: UDP is more vulnerable to attacks, so firewalls are often configured to block suspicious UDP traffic.

8. In a network, If P is the only packet being transmitted and there was no earlier transmission, which of the following delays could be zero?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) Processing delay

Answer: b

Explanation: Since there is no other packet to be transmitted, there is no need for a queue. Therefore, the delay caused due to the queuing would be none i.e. 0.

1. Which of this is not a guided media?

- a) Fiber optical cable
- b) Coaxial cable
- c) Wireless LAN
- d) Copper wire

Answer: c

Explanation: Wireless LAN is unguided media.

2. UTP is commonly used in _____

- a) DSL
- b) FTTP
- c) HTTP
- d) None of the mentioned

Answer: a

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

3. Coaxial cable consists of _____ concentric copper conductors.

- a) 1
- b) 2
- c) 3
- d) 4

Answer: b

Explanation: Coaxial cable has an inner conductor surrounded by a insulating layer, which is surrounded by a conducting shield. Coaxial cable is used to carry high frequency signals with low losses.

4. Fiber optics posses following properties _____

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap

d) All of the mentioned

Answer: d

Explanation: In fibre optics the transmission of information is in the form of light or photons. Due to all above properties mentioned in options fibre optics can be submerged in water and are used at more risk environments.

5. If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps) _____

- a) $n \times 39.8$
- b) $n \times 51.8$
- c) $2n \times 51.8$
- d) None of the mentioned

Answer: b

Explanation: The base unit of transmission rates in optical fibre is 51.8 Mbits/s. So an optical carrier represented as OC-n has $n \times 51.8$ Mbits/s transmission speed. For eg. OC-3 has 3×51.8 Mbits/s speed.

6. Terrestrial radio channels are broadly classified into _____ groups.

- a) 2
- b) 3
- c) 4
- d) 1

Answer: b

Explanation: The three types are those that operate over very short distance, those that operate in local areas, those that operate in the wide area.

7. Radio channels are attractive medium because _____

- a) Can penetrate walls
- b) Connectivity can be given to mobile user
- c) Can carry signals for long distance
- d) All of the mentioned

Answer: d

Explanation: Radio channels can penetrate walls, can be used to provide connectivity to mobile users and can also carry signals for long distances.

8. Geostationary satellites _____

- a) Are placed at a fixed point above the earth
- b) Rotate the earth about a fixed axis
- c) Rotate the earth about a varying axis
- d) All of the mentioned

Answer: a

Explanation: They are placed in orbit at 36,000km above Earth's surface.

1. A local telephone network is an example of a _____ network.

- a) Packet switched
- b) Circuit switched
- c) Bit switched
- d) Line switched

Answer: b

Explanation: Circuit switching is connection oriented switching technique, whereas in the case of packet switching, it is connectionless. Circuit switching is implemented in the Physical layer, whereas packet switching is implemented in the Network layer. Internet too is based on the concept of circuit switching.

2. Most packet switches use this principle _____

- a) Stop and wait
- b) Store and forward
- c) Store and wait
- d) Stop and forward

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet. If the entire packet is not received and the time-out period expires, the packet switch will inform the sender to resend the part of packet or the entire packet based on the algorithm being used.

3. If there are N routers from source to destination, the total end to end delay in sending packet $P(L \rightarrow \text{number of bits in the packet } R \rightarrow \text{transmission rate})$ is equal to _____

- a) N
- b) $(N*L)/R$
- c) $(2N*L)/R$
- d) L/R

Answer: b

Explanation: The equation to find the end to end delay when no. of bits, transmission rate and no. of routers is given by $(N*L)/R$. The total end to end delay, that is, nodal delay is the sum of all, the processing delay, queuing delay, transmission delay and propagation delay.

4. What are the Methods to move data through a network of links and switches?

- a) Packet switching and Line switching
- b) Circuit switching and Line switching
- c) Line switching and bit switching
- d) Packet switching and Circuit switching

Answer: d

Explanation: Packet switching and Circuit switching are two different types of switching methods used to connect the multiple communicating devices with one another. Packet switching is used in conventional LAN systems and circuit switching is used in telephonic systems.

5. The required resources for communication between end systems are reserved for the duration of the session between end systems in _____ method.

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Frequency switching

Answer: b

Explanation: In circuit switching, a physical path between the sender and receiver is established. This path is maintained until the connection is needed. Circuit switching is implemented in the Physical layer and is used in telephonic systems.

6. As the resources are reserved between two communicating end systems in circuit switching, _____ is achieved.

- a) authentication
- b) guaranteed constant rate
- c) reliability
- d) store and forward

Answer: b

Explanation: Circuit switching is connection oriented and is always implemented in the physical layer. Once a path is set, all transmission occurs through the same path. It is used since the early times in telephonic systems.

7. In _____ systems, resources are allocated on demand.

- a) packet switching
- b) circuit switching
- c) line switching
- d) frequency switching

Answer: a

Explanation: In packet switching, the bits are received in out of order and need to be assembled at the receiver end, whereas in the case of Circuit switching, all the bits are received in order. All transmissions may not occur through the same path in case of packet switching.

8. Which of the following is not an application layer service?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) Error control

Answer: d

Explanation: Application layer is the topmost layer in the OSI model. Network virtual terminal, mail service, file transfer, access and management are all services of the application layer. It uses protocols like HTTP, FTP, and DNS etc. to provide these services.

1. Which is not a application layer protocol?

- a) HTTP
- b) SMTP
- c) FTP
- d) TCP

Answer: d

Explanation: TCP is transport layer protocol.

2. The packet of information at the application layer is called _____

- a) Packet
- b) Message
- c) Segment
- d) Frame

Answer: b

Explanation: For Application, Presentation and Session layers there is no data format for message. Message is message as such in these three layers. But when it comes to Transport, Network, Data and Physical layer they have data in format of segments, packets, frames and bits respectively.

3. Which one of the following is an architecture paradigms?

- a) Peer to peer
- b) Client-server
- c) HTTP
- d) Both Peer-to-Peer & Client-Server

Answer: d

Explanation: HTTP is a protocol.

4. Application developer has permission to decide the following on transport layer side

- a) Transport layer protocol
- b) Maximum buffer size
- c) Both Transport layer protocol and Maximum buffer size
- d) None of the mentioned

Answer: c

Explanation: Application layer provides the interface between applications and the network. So application developer can decide what transport layer to use and what should be its maximum buffer size.

5. Application layer offers _____ service.

- a) End to end
- b) Process to process
- c) Both End to end and Process to process
- d) None of the mentioned

Answer: a

Explanation: End to End service is provided in the application layer. Whereas process to process service is provided at the transport layer.

6. E-mail is _____

- a) Loss-tolerant application
- b) Bandwidth-sensitive application
- c) Elastic application
- d) None of the mentioned

Answer: c

Explanation: Because it can work with available throughput.

7. Pick the odd one out.

- a) File transfer
- b) File download
- c) E-mail
- d) Interactive games

Answer: d

Explanation: File transfer, File download and Email are services provided by the application layer and there are message and data oriented.

8. Which of the following is an application layer service?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) All of the mentioned

Answer: d

Explanation: The services provided by the application layer are network virtual terminal, file transfer, access and management, mail services, directory services, various file and data operations.

9. To deliver a message to the correct application program running on a host, the _____ address must be consulted.

- a) IP
- b) MAC
- c) Port
- d) None of the mentioned

Answer: c

Explanation: IP address lets you know where the network is located. Whereas MAC address is a unique address for every device. Port address identifies a process or service you want to carry on.

10. Which is a time-sensitive service?

- a) File transfer
- b) File download
- c) E-mail

d) Internet telephony

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

11. Transport services available to applications in one or another form _____

- a) Reliable data transfer
- b) Timing
- c) Security
- d) All of the mentioned

Answer: d

Explanation: The transport services that are provided to application are reliable data transfer, security and timing. These are very important for proper end to end services.

12. Electronic mail uses which Application layer protocol?

- a) SMTP
- b) HTTP
- c) FTP
- d) SIP

Answer: a

Explanation: Email uses various protocols like SMTP, IMAP and POP. The most prominent one used in application layer is SMTP.

1. The _____ translates internet domain and host names to IP address.

- a) domain name system
- b) routing information protocol
- c) network time protocol
- d) internet relay chat

Answer: a

Explanation: Domain name system is the way the internet domain names are stored and translated to IP addresses. The domain names systems matches the name of website to ip addresses of the website.

2. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?

- a) HTTP
- b) FTP
- c) Telnet
- d) TCP

Answer: c

Explanation: Telnet is used for accessing remote computers. Using telnet a user can access computer remotely. With Telnet, you can log on as a regular user with whatever privileges you may have been granted to the specific application and data on the computer.

3. Application layer protocol defines _____

- a) types of messages exchanged
- b) message format, syntax and semantics
- c) rules for when and how processes send and respond to messages
- d) all of the mentioned

Answer: d

Explanation: Application layer deals with the user interface, what message is to be sent or the message format, syntax and semantics. A user has access to application layer for sending and receiving messages.

4. Which one of the following protocol delivers/stores mail to receiver server?

- a) simple mail transfer protocol
- b) post office protocol
- c) internet mail access protocol
- d) hypertext transfer protocol

Answer: a

Explanation: SMTP, abbreviation for Simple Mail Transfer Protocol is an application layer protocol. A client who wishes to send a mail creates a TCP connection to the SMTP server and then sends the mail across the connection.

5. The ASCII encoding of binary data is called

- a) base 64 encoding
- b) base 32 encoding
- c) base 16 encoding
- d) base 8 encoding

Answer: a

Explanation: Base64 is used commonly in a number of applications including email via MIME, and storing complex data in XML. Problem with sending normal binary data to a network is that bits can be misinterpreted by underlying protocols, produce incorrect data at receiving node and that is why we use this code.

6. Which one of the following is an internet standard protocol for managing devices on IP network?

- a) dynamic host configuration protocol
- b) simple network management protocol
- c) internet message access protocol
- d) media gateway protocol

Answer: b

Explanation: SNMP is a set of protocols for network management and monitoring. This protocol is included in the application layer. SNMP uses 7 protocol data units.

7. Which one of the following is not an application layer protocol?

- a) media gateway protocol
- b) dynamic host configuration protocol

- c) resource reservation protocol
- d) session initiation protocol

Answer: c

Explanation: Resource reservation protocol is used in transport layer. It is designed to reserve resources across a network for quality of service using the integrated services model.

8. Which protocol is a signaling communication protocol used for controlling multimedia communication sessions?

- a) session initiation protocol
- b) session modelling protocol
- c) session maintenance protocol
- d) resource reservation protocol

Answer: a

Explanation: SIP is a signaling protocol in which its function includes initiating, maintaining and terminating real time sessions. SIP is used for signaling and controlling multimedia sessions.

9. Which one of the following is not correct?

- a) Application layer protocols are used by both source and destination devices during a communication session
- b) HTTP is a session layer protocol
- c) TCP is an application layer protocol
- d) All of the mentioned

Answer: d

Explanation: HTTP is an application layer protocol. Whereas TCP is a transport layer protocol.

10. When displaying a web page, the application layer uses the _____

- a) HTTP protocol
- b) FTP protocol
- c) SMTP protocol
- d) TCP protocol

Answer: a

Explanation: HTTP is abbreviation for hypertext transfer protocol. It is the foundation of data communication for world wide web. This protocol decides how the message is formatted and transmitted etc.

1. The number of objects in a Web page which consists of 4 jpeg images and HTML text is _____

- a) 4
- b) 1
- c) 5
- d) 7

Answer: c

Explanation: 4 jpeg images + 1 base HTML file.

2. The default connection type used by HTTP is _____

- a) Persistent
- b) Non-persistent
- c) Can be either persistent or non-persistent depending on connection request
- d) None of the mentioned

Answer: a

Explanation: By default the http connection is issued with persistent connection. In persistent connection server leaves connection open after sending response. As little as one RTT (Time for a small packet to travel from client to server and back) is required for all referenced objects.

3. The time taken by a packet to travel from client to server and then back to the client is called _____

- a) STT
- b) RTT
- c) PTT
- d) JTT

Answer: b

Explanation: RTT stands for round-trip time.

4. The HTTP request message is sent in _____ part of three-way handshake.

- a) First
- b) Second
- c) Third
- d) Fourth

Answer: c

Explanation: In first step client sends a segment to establish a connection with the server. In the second the step the client waits for the acknowledgement to be received from the server. After receiving the acknowledgement, the client sends actual data in the third step.

5. In the process of fetching a web page from a server the HTTP request/response takes _____ RTTs.

- a) 2
- b) 1
- c) 4
- d) 3

Answer: b

Explanation: By default the http connection will be persistent connection. Hence it will take only 1 RTT to fetch a webpage from a server.

6. The first line of HTTP request message is called _____

- a) Request line
- b) Header line
- c) Status line

d) Entity line

Answer: a

Explanation: The line followed by request line are called header lines and status line is the initial part of response message.

7. The values GET, POST, HEAD etc are specified in _____ of HTTP message

- a) Request line
- b) Header line
- c) Status line
- d) Entity body

Answer: a

Explanation: It is specified in the method field of request line in the HTTP request message.

8. The _____ method when used in the method field, leaves entity body empty.

- a) POST
- b) SEND
- c) GET
- d) PUT

Answer: c

Explanation: There are two methods which help to request a response from a server. Those are GET and POST. In GET method, the client requests data from server. In POST method the client submits data to be processed to the server.

9. The HTTP response message leaves out the requested object when _____ method is used

- a) GET
- b) POST
- c) HEAD
- d) PUT

Answer: c

Explanation: HEAD method is much faster than GET method. In HEAD method much smaller amount of data is transferred. The HEAD method asks only for information about a document and not for the document itself.

10. Find the oddly matched HTTP status codes

- a) 200 OK
- b) 400 Bad Request
- c) 301 Moved permanently
- d) 304 Not Found

Answer: d

Explanation: 404 Not Found.

11. Which of the following is not correct?

- a) Web cache doesn't have its own disk space
- b) Web cache can act both like server and client
- c) Web cache might reduce the response time
- d) Web cache contains copies of recently requested objects

Answer: a

Explanation: Web cache or also known as HTTP cache is a temporary storage where HTML pages and images are stored temporarily so that server lag could be reduced.

12. The conditional GET mechanism

- a) Imposes conditions on the objects to be requested
- b) Limits the number of responses from a server
- c) Helps to keep a cache up-to-date
- d) None of the mentioned

Answer: c

Explanation: The HTTP protocol requests the server of the website it's trying to access so that it can store its files, images etc. in cache memory. This request of asking the server for a document considering a specific parameter is called conditional GET Request.

13. Which of the following is present in both an HTTP request line and a status line?

- a) HTTP version number
- b) URL
- c) Method
- d) None of the mentioned

Answer: a

Explanation: Status line is the start line of an HTTP response. It contains the information such as the protocol version, a status text, status code.

1. Multiple objects can be sent over a TCP connection between client and server in a persistent HTTP connection.

- a) True
- b) False

Answer: a

Explanation: Persistent connections are kept active after completing transaction so that multiple objects can be sent over the same TCP connection.

2. HTTP is _____ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) data link layer

Answer: a

Explanation: HTTP is an Application layer protocol used to define how messages are formatted and transmitted through the World Wide Web.

3. In the network HTTP resources are located by

- a) uniform resource identifier
- b) unique resource locator
- c) unique resource identifier
- d) union resource locator

Answer: a

Explanation: The Uniform Resource Identifier is a name and locator for the resource to be located by the HTTP. The URLs and URNs are derived through the identifier.

4. HTTP client requests by establishing a _____ connection to a particular port on the server.

- a) user datagram protocol
- b) transmission control protocol
- c) border gateway protocol
- d) domain host control protocol

Answer: b

Explanation: HTTP clients perform requests using a TCP connection, because the TCP connection provides a more reliable service. UDP is not a reliable protocol, border gateway protocol is used on top of TCP, while domain host control protocol is a network layer protocol.

5. In HTTP pipelining _____

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses
- b) multiple HTTP requests can not be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection
- d) multiple HTTP requests are sent at random on a single TCP connection

Answer: a

Explanation: HTTP pipelining helps the client make multiple requests without having to wait for each response, thus saving a lot of time and bandwidth for the client.

6. FTP server listens for connection on port number _____

- a) 20
- b) 21
- c) 22
- d) 23

Answer: b

Explanation: Port 20 is used for FTP data. Port 22 is used for SSH remote login. Port 23 is used for TELNET.

7. In FTP protocol, client contacts server using ____ as the transport protocol.

- a) transmission control protocol

- b) user datagram protocol
- c) datagram congestion control protocol
- d) stream control transmission protocol

Answer: a

Explanation: The clients use the Transmission Control Protocol for FTP as it's more reliable than UDP, DCCP, and SCTP, and reliability of file transfer is required to be as high as possible for FTP.

8. In Active mode FTP, the client initiates both the control and data connections.

- a) True
- b) False

Answer: b

Explanation: In Passive mode of FTP, the client initiates both data and control connections, while in Active mode, the client initiates the control connection and then the server initiates the data connection.

9. The File Transfer Protocol is built on _____

- a) data centric architecture
- b) service oriented architecture
- c) client server architecture
- d) connection oriented architecture

Answer: c

Explanation: The FTP connection includes a Server and a Client which wish to share files. The server can have multiple clients at the same time while the client communicates with only one server at a time.

10. In File Transfer Protocol, data transfer cannot be done in _____

- a) stream mode
- b) block mode
- c) compressed mode
- d) message mode

Answer: d

Explanation: In Stream mode, the data is transferred in a continuous stream. In Block mode, data is transferred after being divided into smaller blocks. In Compressed mode, data is transferred after being compressed using some compression algorithm.

1. Expansion of FTP is _____

- a) Fine Transfer Protocol
- b) File Transfer Protocol
- c) First Transfer Protocol
- d) Fast Transfer Protocol

Answer: b

Explanation: File Transfer Protocol is an application layer protocol used to share "files" between a

server and a client. The protocol uses two separate ports for data and control connections: port 20 for data and port 21 for control.

2. FTP is built on _____ architecture.

- a) Client-server
- b) P2P
- c) Data centric
- d) Service oriented

Answer: a

Explanation: An FTP connection includes a Server and a Client which wish to share a number of data files. The server can transfer files with multiple clients at the same time while the client communicates with only one server at a time.

3. FTP uses _____ parallel TCP connections to transfer a file.

- a) 1
- b) 2
- c) 3
- d) 4

Answer: b

Explanation: Control connection using FTP port: 21, and data connection using FTP port: 20. The FTP session is started or ended using port 21 and the actual data i.e. files are sent through port 20.

4. Identify the incorrect statement regarding FTP.

- a) FTP stands for File Transfer Protocol
- b) FTP uses two parallel TCP connections
- c) FTP sends its control information in-band
- d) FTP sends exactly one file over the data connection

Answer: c

Explanation: FTP is out-of-band because the data connection is done separately through port 20 and control connection is done separately through port 21.

5. If 5 files are transferred from server A to client B in the same session. The number of TCP

connections between A and B is _____

- a) 5
- b) 10
- c) 2
- d) 6

Answer: d

Explanation: The client would first initiate the TCP control connection through port 21. Then for every file transfer, a separate connection would be made through port 20. Now, since we have five files to be transferred, 1 control connection + 5 data connections = 6 total TCP connections.

6. FTP server _____

- a) Maintains state information

- b) Is stateless
- c) Has single TCP connection for a file transfer
- d) Has UDP connection for file transfer

Answer: a

Explanation: FTP server maintains state information of every control connection to keep track of the active and inactive connections in the session. This helps the server decide which connection to terminate, in case the connection is inactive for too long.

7. The commands, from client to server, and replies, from server to client, are sent across the control connection in _____ bit ASCII format.

- a) 8
- b) 7
- c) 3
- d) 5

Answer: b

Explanation: FTP was designed to transmit commands only in English characters that are possible with just 7 bits in ASCII. Even the media has to be converted to ASCII before transmission.

8. Find the FTP reply whose message is wrongly matched.

- a) 331 – Username OK, password required
- b) 425 – Can't open data connection
- c) 452 – Error writing file
- d) 452 – Can't open data connection

Answer: d

Explanation: The correct response code for the message "Can't open data connection" is 425. Response code 452 is sent usually when the connection is suddenly closed.

9. The data transfer mode of FTP, in which all the fragmenting has to be done by TCP is _____

- a) Stream mode
- b) Block mode
- c) Compressed mode
- d) Message mode

Answer: a

Explanation: Stream mode is the default mode of FTP, in which the TCP transforms/fragments the data into segments, and then after the transmission is completed, converts it back to stream of bytes.

10. The password is sent to the server using _____ command

- a) PASSWD
- b) PASS
- c) PASSWORD
- d) PWORD

Answer: b

Explanation: The PASS command, preceded by the username, completes the user's identification for access control in an FTP session. Without the valid password, the user won't be able to initiate the FTP connection.

1. When the mail server sends mail to other mail servers it becomes _____

- a) SMTP server
- b) SMTP client
- c) Peer
- d) Master

Answer: b

Explanation: SMTP clients are the entities that send mails to other mail servers. The SMTP servers cannot send independent mails to other SMTP servers as an SMTP server. There are no masters or peers in SMTP as it is based on the client-server architecture.

2. If you have to send multimedia data over SMTP it has to be encoded into _____

- a) Binary
- b) Signal
- c) ASCII
- d) Hash

Answer: c

Explanation: Since only 7-bit ASCII codes are transmitted through SMTP, it is mandatory to convert binary multimedia data to 7-bit ASCII before it is sent using SMTP.

3. Expansion of SMTP is _____

- b) Simple Message Transfer Protocol
- c) Simple Mail Transmission Protocol
- d) Simple Message Transmission Protocol

Answer: a

Explanation: SMTP or Simple Mail Transfer Protocol is an application layer protocol used to transport e-mails over the Internet. Only 7-bit ASCII codes can be sent using SMTP.

4. In SMTP, the command to write receiver's mail address is written with the command _____

- a) SEND TO
- b) RCPT TO
- c) MAIL TO
- d) RCVR TO

Answer: b

Explanation: RCPT TO command is followed by the recipient's mail address to specify where or to whom the mail is going to through the internet. If there is more than one receiver, the command is repeated for each address continually.

5. The underlying Transport layer protocol used by SMTP is _____

- a) TCP

- b) UDP
- c) Either TCP or UDP
- d) IMAP

Answer: a

Explanation: TCP is a reliable protocol, and Reliability is a mandatory requirement in e-mail transmission using SMTP.

6. Choose the statement which is wrong incase of SMTP?

- a) It requires message to be in 7bit ASCII format
- b) It is a pull protocol
- c) It transfers files from one mail server to another mail server
- d) SMTP is responsible for the transmission of the mail through the internet

Answer: b

Explanation: In SMTP, the sending mail server pushes the mail to receiving mail server hence it is push protocol. In a pull protocol such as HTTP, the receiver pulls the resource from the sending server.

7. Internet mail places each object in _____

- a) Separate messages for each object
- b) One message
- c) Varies with number of objects
- d) Multiple messages for each object

Answer: b

Explanation: It places all objects into one message as it wouldn't be efficient enough if there are different messages for each object. The objects include the text and all the multimedia to be sent.

8. Typically the TCP port used by SMTP is _____

- a) 25
- b) 35
- c) 50
- d) 15

Answer: a

Explanation: The ports 15, 35 and 50 are all UDP ports and SMTP only uses TCP port 25 for reliability.

9. A session may include _____

- a) Zero or more SMTP transactions
- b) Exactly one SMTP transactions
- c) Always more than one SMTP transactions
- d) Number of SMTP transactions cant be determined

Answer: a

Explanation: An SMTP session consists of SMTP transactions only even if no transactions have been

performed. But no transactions in the session might mean that the session is inactive or is just initiated.

10. Which of the following is an example of user agents for e-mail?

- a) Microsoft Outlook
- b) Facebook
- c) Google
- d) Tumblr

Answer: a

Explanation: Among the options, only Microsoft Outlook is an e-mail agent. Google is a search engine and Facebook, and Tumblr are social networking platforms. Gmail and Alpine are some other examples of e-mail agent.

11. When the sender and the receiver of an email are on different systems, we need only _____

- a) One MTA
- b) Two UAs
- c) Two UAs and one MTA
- d) Two UAs and two MTAs

Answer: d

Explanation: The sender's User Agent (UA) submits the message to a Message Transfer Agent (MTA). Then the MTA sends the message to another MTA i.e. a mail relay. Then the receiver receives the message from the mail relay whenever it is available.

12. User agent does not support this _____

- a) Composing messages
- b) Reading messages
- c) Replying messages
- d) Routing messages

Answer: d

Explanation: The user agent is basically a software program that allows the user to send, and receive e-mail messages. Routing of the message is done by the Message Transfer Agent.

1. Simple mail transfer protocol (SMTP) utilizes _____ as the transport layer protocol for electronic mail transfer.

- a) TCP
- b) UDP
- c) DCCP
- d) SCTP

Answer: a

Explanation: Since TCP is a reliable protocol, it's more efficient to use TCP protocol for e-mail transfer. TCP also provides more security than other transport layer protocols.

2. SMTP connections secured by SSL are known as _____

- a) SMTSP

- b) SSMTP
- c) SNMP
- d) STARTTLS

Answer: a

Explanation: SSMTP is a simple mail transfer program to send mail from a local PC to a mail host. SNMP is a network management protocol. STARTTLS connections are secured by TLS.

3. SMTP uses which of the following TCP port?

- a) 22
- b) 23
- c) 21
- d) 25

Answer: d

Explanation: Port 21 is used for FTP control connection, port 22 is used by SSH, and port 23 is used by TELNET.

4. Which one of the following protocol is used to receive mail messages?

- a) SMTP
- b) Post Office Protocol (POP)
- c) Internet Message Access Protocol (IMAP)
- d) FTP

Answer: d

Explanation: FTP is used to share files. SMTP, POP and IMAP are the protocols used to send and receive mails on the internet.

5. What is on-demand mail relay (ODMR)?

- a) protocol for SMTP security
- b) an SMTP extension
- c) protocol for web pages
- d) protocol for faster mail transfer

Answer: b

Explanation: ODMR is an extension to SMTP, in which mails are relayed to the receivers after they are authenticated. It allows only the authorized receivers to receive the mail.

6. An email client needs to know the _____ of its initial SMTP server.

- a) IP address
- b) MAC address
- c) URL
- d) Name

Answer: a

Explanation: The client needs to know the IP of its initial SMTP server as it has to send the mail first to that server and then the server forwards the mail ahead on behalf of the user.

7. An SMTP session may not include _____

- a) zero SMTP transaction
- b) one SMTP transaction
- c) more than one SMTP transaction
- d) one HTTP transaction

Answer: d

Explanation: An SMTP session can only include SMTP transactions regardless the number. Any other protocol's transaction is not included in an SMTP session.

8. SMTP defines _____

- a) message transport
- b) message encryption
- c) message content
- d) message password

Answer: a

Explanation: As the name suggests, Simple Mail Transfer Protocol is only responsible for "how" the message is transferred i.e. Transport of the message. Other protocols such as TCP are used to provide other services like encryption for the messages.

9. Which one of the following is an SMTP server configured in such a way that anyone on the internet can send e-mail through it?

- a) open mail relay
- b) wide mail reception
- c) open mail reception
- d) short mail reception

Answer: a

Explanation: Anyone can send an e-mail through an Open Mail Relay server so it acted like a free relay for email agents to forward their mails through. Open Mail Relays are now unpopular because they can be used by attackers to perform man-in-the-middle attacks.

10. SMTP is not used to deliver messages to _____

- a) user's terminal
- b) user's mailbox
- c) user's word processor
- d) user's email client

Answer: c

Explanation: SMTP can only be used to send messages to user's terminal, email client or mailbox. A stand-alone word processor cannot be connected to a network, so it won't be possible to deliver messages to it.

1. The entire hostname has a maximum of _____

- a) 255 characters
- b) 127 characters

- c) 63 characters
- d) 31 characters

Answer: a

Explanation: An entire hostname can have a maximum of 255 characters. Although each label must be from 1 to 63 characters long. Host name is actually a label that is given to a device in a network.

2. A DNS client is called _____

- a) DNS updater
- b) DNS resolver
- c) DNS handler
- d) none of the mentioned

Answer: b

Explanation: DNS client also known as DNS resolver also known as DNS lookup helps to resolve DNS requests using an external DNS server.

3. Servers handle requests for other domains _____

- a) directly
- b) by contacting remote DNS server
- c) it is not possible
- d) none of the mentioned

Answer: b

Explanation: Whenever a request is received at server from other domains, it handles this situation by contacting remote DNS server.

4. DNS database contains _____

- a) name server records
- b) hostname-to-address records
- c) hostname aliases
- d) all of the mentioned

Answer: d

Explanation: Domain Name system not only deals with mapping IP addresses with the hostname but also deals with exchange of information in the server.

5. If a server has no clue about where to find the address for a hostname then _____

- a) server asks to the root server
- b) server asks to its adjacent server
- c) request is not processed
- d) none of the mentioned

Answer: a

Explanation: Root name servers are actually very important and critical as they are the first step in translating human readable hostnames into IP addresses for carrying out communication.

6. Which one of the following allows client to update their DNS entry as their IP address change?
- a) dynamic DNS
 - b) mail transfer agent
 - c) authoritative name server
 - d) none of the mentioned

Answer: a

Explanation: Dynamic DNS or in short DDNS or DynDNS helps in automatically updating a name server in the DNS. This does not require manual editing.

7. Wildcard domain names start with label _____
- a) @
 - b) *
 - c) &
 - d) #

Answer: b

Explanation: A wildcard DNS record matches requests to a non existent domain name. This wildcard DNS record is specified by using asterisk "*" as the starting of a domain name.

8. The right to use a domain name is delegated by domain name registers which are accredited by _____
- a) internet architecture board
 - b) internet society
 - c) internet research task force
 - d) internet corporation for assigned names and numbers

Answer: d

Explanation: The ICANN (Internet Corporation for Assigned Names and Numbers) deals with IP address space allocation, protocol identifier assignment, generic and country code Top Level domain name system management (gTLD and ccTLD).

9. The domain name system is maintained by _____
- a) distributed database system
 - b) a single server
 - c) a single computer
 - d) none of the mentioned

Answer: a

Explanation: A domain name system is maintained by a distributed database system. It is a collection of multiple, logically interrelated databases distributed over a computer network.

10. Which one of the following is not true?
- a) multiple hostnames may correspond to a single IP address
 - b) a single hostname may correspond to many IP addresses
 - c) a single hostname may correspond to a single IP address

d) none of the mentioned

Answer: c

Explanation: It need not be that a single hostname will correspond to a ip address. For example facebook.com and fb.com both correspond to same ip address. So there can be multiple hostnames for a single ip address.

1. Secure shell (SSH) network protocol is used for _____

- a) secure data communication
- b) remote command-line login
- c) remote command execution
- d) all of the mentioned

Answer: d

Explanation: SSH provides high encryption and security features while communicating through a network. It is a cryptographic network protocol.

2. SSH can be used in only _____

- a) unix-like operating systems
- b) windows
- c) both unix-like and windows systems
- d) none of the mentioned

Answer: c

Explanation: SSH isn't confined to a certain network or operating system. It can be implemented over different networks and on different operating systems.

3. SSH uses _____ to authenticate the remote computer.

- a) public-key cryptography
- b) private-key cryptography
- c) any of public-key or private-key
- d) both public-key & private-key

Answer: a

Explanation: Public encryption key is slower but more flexible. Every cryptographic security system requires a private key for private access and a public key for location.

4. Which standard TCP port is assigned for contacting SSH servers?

- a) port 21
- b) port 22
- c) port 23
- d) port 24

Answer: b

Explanation: Port 22 is used for contacting ssh servers, used for file transfers (scp, sftp) and also port forwarding.

5. Which one of the following protocol can be used for login to a shell on a remote host except SSH?

- a) telnet
- b) rlogin
- c) both telnet and rlogin
- d) none of the mentioned

Answer: c

Explanation: SSH is more secured than telnet and rlogin.

6. Which one of the following is a file transfer protocol using SSH?

- a) SCP
- b) SFTP
- c) Rsync
- d) All of the mentioned

Answer: d

Explanation: SCP (Secure copy protocol), SFTP (SSH File Transfer Protocol) and Rsync all are file transfer protocols which are used by SSH.

7. SSH-2 does not contain _____

- a) transport layer
- b) user authentication layer
- c) physical layer
- d) connection layer

Answer: c

Explanation: SSH2 is a more secure, portable and efficient version of SSH that includes SFTP, which is functionally similar to FTP, but is SSH2 encrypted.

8. Which one of the following feature was present in SSH protocol, version 1?

- a) password changing
- b) periodic replacement of session keys
- c) support for public-key certificates
- d) none of the mentioned

Answer: d

Explanation: All of the mentioned features are provided by SSH-2 and that SSH-1 only provide strong authentication and guarantee confidentiality.

9. SCP protocol is evolved from _____ over SSH.

- a) RCP protocol
- b) DHCP protocol
- c) MGCP protocol
- d) GCP protocol

Answer: a

Explanation: RCP is the abbreviation for Rate Control Protocol is a congestion control algorithm for fast user response times.

10. Which one of the following authentication method is used by SSH?

- a) public-key
- b) host based
- c) password
- d) all of the mentioned

Answer: d

Explanation: SSH used public key authentication, Password authentication, Host based authentication, keyboard authentication and authentication of servers.

1. DHCP (dynamic host configuration protocol) provides _____ to the client.

- a) IP address
- b) MAC address
- c) Url
- d) None of the mentioned

Answer: a

Explanation: We use DHCP to allow the hosts to acquire their ip addresses dynamically which is better than visiting each and every host on the network and configure all of this information manually.

2. DHCP is used for _____

- a) IPv6
- b) IPv4
- c) Both IPv6 and IPv4
- d) None of the mentioned

Answer: c

Explanation: DHCP is used for both IPv4 and IPv6 addressing. With DHCP you get to let the hosts know about the change dynamically, and hosts update their info themselves.

3. The DHCP server _____

- a) maintains a database of available IP addresses
- b) maintains the information about client configuration parameters
- c) grants a IP address when receives a request from a client
- d) all of the mentioned

Answer: d

Explanation: Whenever a DHCP server gets a request from a client it responds with a DHCP offer containing IP address being offered, network mask offered, the amount of time that the client can use and keep it, the ip address of the DHCP server making this offer.

4. IP assigned for a client by DHCP server is

- a) for a limited period

- b) for an unlimited period
- c) not time dependent
- d) none of the mentioned

Answer: a

Explanation: The IP address offered to a client is only for a limited period of time. There is actually a certain amount of time that the client can use and keep this IP address.

5. DHCP uses UDP port _____ for sending data to the server.

- a) 66
- b) 67
- c) 68
- d) 69

Answer: b

Explanation: 67 is the UDP port number that is used as the destination port of a server. Whereas UDP port number 68 is used by the client.

6. The DHCP server can provide the _____ of the IP addresses.

- a) dynamic allocation
- b) automatic allocation
- c) static allocation
- d) all of the mentioned

Answer: d

Explanation: When a host acquires multiple offers of IP addresses from different DHCP servers, the host will broadcast a dhcp request identifying the server whose offer has been accepted.

7. DHCP client and servers on the same subnet communicate via _____

- a) UDP broadcast
- b) UDP unicast
- c) TCP broadcast
- d) TCP unicast

Answer: a

Explanation: DHCP actually employs a connectionless service, which is provided by UDP, since TCP is connection oriented. It is implemented with two UDP port numbers 67 and 68 for its operations.

8. After obtaining the IP address, to prevent the IP conflict the client may use _____

- a) internet relay chat
- b) broader gateway protocol
- c) address resolution protocol
- d) none of the mentioned

Answer: c

Explanation: ARP abbreviation for address resolution protocol is used for mapping IP addresses to MAC addresses that are present in the local network.

9. What is DHCP snooping?

- a) techniques applied to ensure the security of an existing DHCP infrastructure
- b) encryption of the DHCP server requests
- c) algorithm for DHCP
- d) none of the mentioned

Answer: a

Explanation: DHCP snooping is a security feature that is used in OS of a network in the layer 2. This technology prevents unauthorized DHCP servers offering IP addresses to DHCP clients.

10. If DHCP snooping is configured on a LAN switch, then clients having specific _____ can access the network.

- a) MAC address
- b) IP address
- c) Both MAC address and IP address
- d) None of the mentioned

Answer: c

Explanation: The DHCP snooping is done to prevent unauthorized IP addresses being offered by unauthorized servers. This features allows only specific mac addresses and IP addresses to access the network.

1. IPSec is designed to provide security at the _____

- a) Transport layer
- b) Network layer
- c) Application layer
- d) Session layer

Answer: b

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

2. In tunnel mode, IPSec protects the _____

- a) Entire IP packet
- b) IP header
- c) IP payload
- d) IP trailer

Answer: a

Explanation: In the tunnel mode, IPSec adds control bits into the packets to encrypt the entire packet between the IPSec endpoints. Using encryption, it provides secure communication between the two endpoints.

3. Which component is included in IP security?

- a) Authentication Header (AH)
- b) Encapsulating Security Payload (ESP)

- c) Internet key Exchange (IKE)
- d) All of the mentioned

Answer: d

Explanation: AH ensures that there is no retransmission of data from an unauthorized source, and protects against data tampering. ESP provides with content protection and ensures that there is integrity and confidentiality for the message. IKE is used to make sure that only the intended sender and receiver can access the message.

4. WPA2 is used for security in _____

- a) Ethernet
- b) Bluetooth
- c) Wi-Fi
- d) Email

Answer: c

Explanation: WPA2 or WiFi Protected Access 2 is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

5. An attempt to make a computer resource unavailable to its intended users is called _____

- a) Denial-of-service attack
- b) Virus attack
- c) Worms attack
- d) Botnet process

Answer: a

Explanation: In a Denial of Service attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. The methods that the attacker can use are vulnerability attack, bandwidth flooding and connection flooding.

6. Extensible authentication protocol is authentication framework frequently used in _____

- a) Wired personal area network
- b) Wireless networks
- c) Wired local area network
- d) Wired metropolitan area network

Answer: b

Explanation: The Extensible Authentication Protocol (EAP) is an authentication protocol used to connect a network node to the Internet. It designed through extending the methods used by the Point-to-Point Protocol for authentication.

7. Pretty good privacy (PGP) is used in _____

- a) Browser security
- b) Email security
- c) FTP security

d) WiFi security

Answer: b

Explanation: PGP is an encryption method used in e-mail security to encrypt and decrypt the content of an e-mail transmitted over the internet. It makes sure that the message cannot be stolen by other unauthorized users.

8. PGP encrypts data by using a block cipher called _____

- a) International data encryption algorithm
- b) Private data encryption algorithm
- c) Internet data encryption algorithm
- d) Local data encryption algorithm

Answer: a

Explanation: The IDEA was designed in 1991 by Xuejia Lai and James Massey. Before IDEA, PGP used the cipher method BassOmatic.

9. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called _____

- a) DNS lookup
- b) DNS hijacking
- c) DNS spoofing
- d) DNS authorizing

Answer: c

Explanation: In DNS spoofing, also known as DNS cache poisoning, an attacker gets the valid credentials from a victim by spoofing the intended resource, and tricking the victim to give his/her valid authorization credentials.

1. A _____ is an extension of an enterprise's private intranet across a public network such as the internet, creating a secure private connection.

- a) VNP
- b) VPN
- c) VSN
- d) VSPN

Answer: b

Explanation: VPN provides enhanced security and online anonymity to users on the internet. It is also used to unblock websites that are unavailable in certain regions.

2. When were VPNs introduced into the commercial world?

- a) Early 80's
- b) Late 80's
- c) Early 90's
- d) Late 90's

Answer: d

Explanation: VPNs were first introduced in the year 1996. Then as the internet started to get popularized, the need for connection security increased. VPN was a great solution to this, and that's when VPNs were implemented in the commercial world.

3. What protocol is NOT used in the operation of a VPN?

- a) PPTP
- b) IPsec
- c) YMUM
- d) L2TP

Answer: c

Explanation: PPTP is a tunneling protocol which was initially used for the creation of VPNs. IPsec is used in encrypting the traffic flowing in the VPN. L2TP is used to tunnel all the L2 traffic on the VPN.

4. Which of the following statements is NOT true concerning VPNs?

- a) Financially rewarding compared to leased lines
- b) Allows remote workers to access corporate data
- c) Allows LAN-to-LAN connectivity over public networks
- d) Is the backbone of the Internet

Answer: d

Explanation: VPNs are not the backbone of the Internet as they are just a method to create private intranets on the internet. They are used for enhancing the connection security for the users.

5. Traffic in a VPN is NOT _____

- a) Invisible from public networks
- b) Logically separated from other traffic
- c) Accessible from unauthorized public networks
- d) Restricted to a single protocol in IPsec

Answer: c

Explanation: Traffic in a VPN is not accessible from any unauthorized public networks because it is secured with the masking IP address. This provides the benefit of access to blocked resources to the users.

6. VPNs are financially speaking _____

- a) Always more expensive than leased lines
- b) Always cheaper than leased lines
- c) Usually cheaper than leased lines
- d) Usually more expensive than leased lines

Answer: c

Explanation: The services of a VPN are cheaper for moderate to large scale institutional networks than the services of leased lines. Though for a small scale network, it does not prove to be as beneficial as the costs are not reduced to a great degree as compared to leased lines.

7. Which layer 3 protocols can be transmitted over an L2TP VPN?

- a) Only IP
- b) Only IPX
- c) Only ICMP
- d) IP and IPX

Answer: d

Explanation: L2TP stands for Layer 2 Tunneling Protocol. It is used to tunnel all the L2 traffic on an IP network and is able to transmit network layer's IP and IPX protocol data.

8. ESP (Encapsulating Security Protocol) is defined in which of the following standards?

- a) IPsec
- b) PPTP
- c) PPP
- d) L2TP

Answer: a

Explanation: ESP is a security component of IPSec. ESP provides content protection and ensures that there is integrity and confidentiality of the message. The other security components of IPSec are Authentication Header and Internet Key Exchange.

9. L2F was developed by which company?

- a) Microsoft
- b) Cisco
- c) Blizzard Entertainment
- d) IETF

Answer: b

Explanation: L2F stands for Layer 2 Forwarding protocol. It was designed by Cisco to tunnel PPP traffic, helping create VPNs over the internet.

10. Which layer of the OSI reference model does PPTP work at?

- a) Layer 1
- b) Layer 2
- c) Layer 3
- d) Layer 4

Answer: b

Explanation: PPTP stands for Point-to-Point Tunneling Protocol. PPTP is a tunneling protocol that was primitively used to create VPNs. It is no longer used for VPNs due to the lack of security it provides.

11. Which layer of the OSI reference model does IPsec work at?

- a) Layer 1
- b) Layer 2
- c) Layer 3
- d) Layer 4

Answer: c

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. It operates in the network layer.

1. Storage management comprises of _____

- a) SAN Management
- b) Data protection
- c) Disk operation
- d) All of the mentioned

Answer: d

Explanation: SAN management, data protection and disk operation are the main components of the Storage Management Initiative Specification. SMI-S was developed by the Storage Networking Industry Association.

2. Which of the following is not a storage device?

- a) Switch
- b) RAID Arrays
- c) Tape drives
- d) Hub

Answer: d

Explanation: Switches, RAID arrays and tape drives are the main storage devices in SMI-S, while a Hub is simple networking device that cannot be used as storage.

3. Which protocols are used for Storage management?

- a) SNMP
- b) LDAP
- c) POP3
- d) MIB

Answer: a

Explanation: Simple Network Management Protocol is used for storage management. Lightweight Directory Access Protocol is used to access or locate information about directories and other resources on a network. Post Office Protocol 3 is used for e-mailing on the internet. Management Information Base is a part of SNMP and contains hierarchically organized information.

4. Identify the difficulty a SAN administrator does not incur while dealing with diverse vendors.

- a) Proprietary management interfaces
- b) Multiple applications to manage storage in the data center
- c) No single view
- d) Single view

Answer: d

Explanation: A single view is not possible with diverse vendors present. Proprietary management interfaces, multiple applications management and no single view are the main difficulties incurred by a SAN administrator in such a situation.

5. How do Storage administrators ensure secure access to storage devices?

- a) By using Zoning
- b) By putting a physical lock on the storage device
- c) By keeping devices shutdown when not in use
- d) By keeping devices when used

Answer: a

Explanation: Zoning is a method in SAN that can be used by a storage administrator to specify who can see what in the SAN. Zoning might complicate the scaling process if the size of the SAN increases.

6. Effective Storage management does not include _____

- a) security
- b) backups
- c) reporting
- d) connection

Answer: d

Explanation: Connection is the responsibility of the connection manager. Storage management includes management of all necessities such as security, backups and reporting facilities.

7. Among the following, identify which task is not involved in Storage Capacity management?

- a) Identifying storage systems are approaching full capacity
- b) Monitoring trends for each resource
- c) Tracking Total capacity, total used, total available
- d) Preventing unauthorized access to the storage

Answer: d

Explanation: Prevention of unauthorized access to storage is the task of Security management. Identifying when the storage is approaching full capacity, monitoring trends, reporting and tracking capacity are the tasks of Storage Capacity management.

8. Effect of open standards like SMI(s) is _____

- a) standardization drives software interoperability and interchange ability
- b) breaks the old-style dependence on proprietary methods, trade secrets, and single providers
- c) builds a strong foundation on which others can quickly build and innovate
- d) all of the mentioned

Answer: d

Explanation: Open standards like SMI-S inculcate a general ideal through which the normal designers are able to easily implement the standard into their software and its scalability. Since it is open-source, nothing is hidden from its users and they can implement it as they like or require to. As a whole lot of time is spent to build it as strong and scalable, it provides an efficient foundation to the designers to build and innovate on.

9. Task of Distributed Management Task Force is not _____

- a) to promote interoperability among the management solution providers

- b to act as an interface between the various budding technologies and provide solution to manage various environments
- c) to track the operation of the different management solution providers
- d) to manage the facility by itself if one of the management solution providers fail

Answer: d

Explanation: The Distributed Management Task Force is used just to simplify the overall management of the network. It cannot manage a network facility by itself in case one of the management solution providers fails. It provides an interface for promoting interoperability among management solution providers.

10. SMI-S Standard uses which of the following?

- a) Java RMI
- b) CIM-XML/HTTP
- c) CORBA
- d) .NET

Answer: b

Explanation: The Distributed Management Task Force maintains a Common Information Model (CIM) to represent a common set of network objects and their relationships. CIM-XML/HTTP refers to the operations of CIM being performed over HTTP or XML. SMI-S uses CIM-XML/HTTP.

1. The application-level protocol in which a few manager stations control a set of agents is called _____

- a) HTML
- b) TCP
- c) SNMP
- d) SNMP/IP

Answer: c

Explanation: SNMP stands for Simple Network Management Protocol. It is an application-level protocol in which a few manager stations control a set of agents. It is used under the TCP/IP protocol suite and is used for managing devices on the internet.

2. Full duplex mode increases the capacity of each domain by _____

- a) 10 to 20 mbps
- b) 20 to 30 mbps
- c) 30 to 40 mbps
- d) 40 to 50 mbps

Answer: a

Explanation: In full duplex mode, both endpoints share a single channel bandwidth to achieve two-way transmission. This results in complete utilization of the band capacity increasing the capacity by 10 to 20 mbps than half-duplex mode.

3. Configuration management can be divided into which two subsystems?

- a) Reconfiguration and documentation

- b) Management and configuration
- c) Documentation and dialing up
- d) Configuration and dialing up

Answer: a

Explanation: The best current practices report is created by a management group to ensure the most effective configuration management. The group also makes a MIB (Management Information Base) module to help with the configuration management.

4. To use a Simple Network Management System, we need _____

- a) Servers
- b) IP
- c) Protocols
- d) Rules

Answer: d

Explanation: Rules are a collection of expression containing parameters to observe the attributes of the user's device, and then execute some actions. It specifies the parameters for the managed objects inside the application and performs operations that would support the expression. The input of a rule may be many expressions or even a single expression that end in an output of single object invoking some action.

5. The main difference between SNMPv3 and SNMPv2 is _____

- a) Management
- b) Integration
- c) Classification
- d) Enhanced security

Answer: d

Explanation: SNMPv3 has introduced new cryptographic security, through which confidentiality is provided by encrypting packets and blocking intruders. It also ensures that the message is coming from a reliable source.

6. In Network Management System, the division that is responsible for controlling access to network based on a predefined policy is called _____

- a) Fault Management
- b) Secured Management
- c) Active Management
- d) Security Management

Answer: d

Explanation: Security management is also responsible to provide confidentiality, authentication and encryption in addition to controlling access to network. Without security management, the network and its traffic would be vulnerable to be exploited by attackers.

7. BER stands for _____

- a) Basic Encoding Rules

- b) Basic Encoding Resolver
- c) Basic Encoding Rotator
- d) Basic Encoding Router

Answer: a

Explanation: The Basic Encoding Rules are a set of rules that specify the guidelines to encode the SNMP messages in binary form. Each SNMP message is encoded into 3 parts namely data, length and type of message.

8. Control of the users' access to network resources through charges is the main responsibility of _____

- a) Reactive Fault Management
- b) Reconfigured Fault Management
- c) Accounting Management
- d) Security Management

Answer: c

Explanation: The accounting management keeps track of the users and their access rights to the network and controls the user's access by communicating with the security management. The accounting management takes support of the Management Information Block to perform its operations.

9. SNMP is the framework for managing devices in an internet using the _____

- a) TCP/IP protocol
- b) UDP
- c) SMTP
- d) None

Answer: a

Explanation: SNMP is a management protocol in which a few manager stations control a set of agents using the TCP/IP protocol suite. SNMP stands for Simple Network Management Protocol.

10. Structure of Management Information (SMI), is the guideline of _____

- a) HTTP
- b) SNMP
- c) URL
- d) MIB

Answer: b

Explanation: SMI was developed by the Storage Networking Industry Association (SNIA) and it defines a standard that can be manipulated by SNMP. Basically, it defines the standard format and hierarchy of management data which is used by the SNMP. It does not describe how the objects are to be managed.

1. The application layer protocol used by a Telnet application is _____

- a) Telnet
- b) FTP

- c) HTTP
- d) SMTP

Answer: a

Explanation: Telnet is an application layer protocol that provides access to the command-line interface on a remote host. Telnet stands for teletype network.

2. Which amongst the following statements is correct for “character at a time” mode?

- a) Character processing is done on the local system under the control of the remote system
- b) Most text typed is immediately sent to the remote host for processing
- c) All text is echoed locally, only completed lines are sent to the remote host
- d) All text is processed locally, and only confirmed lines are sent to the remote host

Answer: b

Explanation: In character at a time mode, the typed text is sent immediately to the remote host while the user is typing. Another mode used in Telnet is “Old line by line” mode in which only completed lines are sent to the remote host.

3. _____ allows you to connect and login to a remote computer

- a) Telnet
- b) FTP
- c) HTTP
- d) SMTP

Answer: a

Explanation: Telnet provides access to the command-line interface on a remote computer. One can login to the computer from the command-line interface.

4. What is the correct syntax to be written in the web browser to initiate a Telnet connection to www.sanfoundry.com?

- a) telnet//www.sanfoundry.com
- b) telnet:www.sanfoundry.com
- c) telnet://www.sanfoundry.com
- d) telnet www.sanfoundry.com

Answer: c

Explanation: telnet://" is the header to be used to initiate a Telnet connection to a web server. One can browse the website using telnet if they are authorized to.

5. Telnet is used for _____

- a) Television on net
- b) Network of Telephones
- c) Remote Login
- d) Teleshopping site

Answer: c

Explanation: Telnet is an application layer protocol that provides access to the command line interface of a remote computer that can be used to perform remote login.

6. Which one of the following is not correct?

- a) telnet is a general purpose client-server program
- b) telnet lets user access an application on a remote computer
- c) telnet can also be used for file transfer
- d) telnet can be used for remote login

Answer: c

Explanation: File Transfer Protocol is used for file transfer. Telnet provides access to the command-line interface on a remote host.

7. Which operating mode of telnet is full duplex?

- a) default mode
- b) server mode
- c) line mode
- d) character mode

Answer: c

Explanation: In line mode, terminal character processing is done on the client side but editing is enabled on the server side. Line mode reduces the number of packets and is useful for long delay networks.

8. If we want that a character be interpreted by the client instead of server _____

- a) interpret as command (IAC) escape character has to be used
- b) control functions has to be disabled
- c) it is not possible
- d) cli character has to be used

Answer: a

Explanation: The client must look at each byte that arrives and look for IAC escape character. If IAC is found, the client moves on to look for any other code or IAC. If the next byte is IAC – a single byte is presented by the client to the terminal. If IAC is followed by any other code than IAC, the client interprets this as a command.

1. Telnet protocol is used to establish a connection to _____

- a) TCP port number 21
- b) TCP port number 22
- c) TCP port number 23
- d) TCP port number 25

Answer: c

Explanation: TCP port 21 is used for FTP, TCP port 22 is used for SSH and TCP port 25 is used for SMTP. Telnet provides access to a command line interface on a remote computer using the TCP port number 23.

2. Which one of the following is not true?

- a) telnet defines a network virtual terminal (NVT) standard
- b) client programs interact with NVT
- c) server translates NVT operations
- d) client can transfer files using to remote server using NVT

Answer: d

Explanation: The client can use the NVT only to interact with the programs already present on the remote server, not to transfer files to it. To transfer files, an FTP connection has to be used.

3. All telnet operations are sent as _____

- a) 4 bits
- b) 8 bits
- c) 16 bits
- d) 32 bits

Answer: b

Explanation: Telnet provides a bi-directional, 8-bit byte oriented communications facility through which operations are sent as 8-bit bytes for the server to interpret.

4. AbsoluteTelnet is a telnet client for _____ Operating system.

- a) windows
- b) linux
- c) mac
- d) ubuntu

Answer: a

Explanation: AbsoluteTelnet was originally released in 1999. It was developed by Brian Pence of Celestial Software.

5. The decimal code of Interpret as Command (IAC) character is _____

- a) 252
- b) 253
- c) 254
- d) 255

Answer: d

Explanation: If we want that a character be interpreted by the client instead of server, we use the IAC character. If IAC is followed by any other code than IAC, the client interprets it as a character.

6. Which of the following is true for character mode operation of telnet implementation?

- a) each character typed is sent by the client to the server
- b) each character typed is discarded by the server
- c) each character typed is aggregated into a word and then sent to the server
- d) each character type is aggregated into a line and then sent to the server

Answer: a

Explanation: In character mode, each character that the user is typing is immediately sent to the server which then interprets it only after the complete operation command is received.

7. In which mode of telnet, the client echoes the character on the screen but does not send it until a whole line is completed?

- a) default mode
- c) character mode
- c) server mode
- d) command mode

Answer: a

Explanation: In the default mode, the client does not send each character typed by the user to the server, thus saving the amount of packet transmissions required for executing each operation. But the server has to remain idle until the client sends the completed line wasting a lot of time.

8. Which one of the following is not correct?

- a) telnet is a general purpose client-server program
- b) telnet lets user access an application on a remote computer
- c) telnet can also be used for file transfer
- d) telnet can be used for remote login

Answer: c

Explanation: File Transfer Protocol is used for file transfer. Telnet provides access to the command-line interface on a remote host.

1. Which of the following is false with respect to TCP?

- a) Connection-oriented
- b) Process-to-process
- c) Transport layer protocol
- d) Unreliable

Answer: d

Explanation: TCP is a transport layer protocol that provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network.

2. In TCP, sending and receiving data is done as _____

- a) Stream of bytes
- b) Sequence of characters
- c) Lines of data
- d) Packets

Answer: a

Explanation: TCP provides stream oriented delivery between hosts communicating via an IP network and there are no message boundaries. TCP can concatenate data from a number of send () commands into one stream of data and still transmit it reliably.

3. TCP process may not write and read data at the same speed. So we need _____ for storage.

- a) Packets
- b) Buffers
- c) Segments
- d) Stacks

Answer: b

Explanation: A TCP receiver has a receive buffer that is used to store the unprocessed incoming packets in case the sender is sending packets faster than the processing rate of the received packets.

4. TCP groups a number of bytes together into a packet called _____

- a) Packet
- b) Buffer
- c) Segment
- d) Stack

Answer: c

Explanation: A segment may be collection of data from many send () statements. TCP transmits each segment as a stream of bytes.

5. Communication offered by TCP is _____

- a) Full-duplex
- b) Half-duplex
- c) Semi-duplex
- d) Byte by byte

Answer: a

Explanation: Data can flow both the directions at the same time during a TCP communication hence, it is full-duplex. This is the reason why TCP is used in systems that require full-duplex operation such as e-mail systems.

6. To achieve reliable transport in TCP, _____ is used to check the safe and sound arrival of data.

- a) Packet
- b) Buffer
- c) Segment
- d) Acknowledgment

Answer: d

Explanation: Acknowledgment mechanism is used to check the safe and sound arrival of data. The sender actively checks for acknowledgement from the receiver and once a specific time period has passed, it retransmits the data.

7. In segment header, sequence number and acknowledgement number fields refer to _____

- a) Byte number
- b) Buffer number
- c) Segment number

d) Acknowledgment

Answer: a

Explanation: As TCP has to ensure ordered delivery of packets, sequence number and acknowledgement number are used to identify the byte number of the packet in the stream of bytes being transmitted.

8. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001.

What is the sequence number of the segment if all data is sent in only one segment?

- a) 10000
- b) 10001
- c) 12001
- d) 11001

Answer: b

Explanation: The sequence number given to first byte of a segment, with respect to its order among the previous segments, is the sequence number of that segment.

9. Bytes of data being transferred in each connection are numbered by TCP. These numbers start with a _____

- a) Fixed number
- b) Random sequence of 0's and 1's
- c) One
- d) Sequence of zero's and one's

Answer: d

Explanation: One might expect the sequence number of the first byte in the stream to be 0, or 1. But that does not happen in TCP. Instead, the sender has to choose an Initial Sequence Number (ISN), which is basically a random 32 bit sequence of 0's and 1's, during the connection handshake.

10. The value of acknowledgement field in a segment defines _____

- a) sequence number of the byte received previously
- b) total number of bytes to receive
- c) sequence number of the next byte to be received
- d) sequence of zeros and ones

Answer: c

Explanation: The acknowledgement field in a segment defines the sequence number of the byte which is to be received next i.e. sequence number of byte that the sender should transmit next.

1. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as _____

- a) Flow control
- b) Error control
- c) Congestion control
- d) Error detection

Answer: a

Explanation: Flow control is done to prevent the receiver from being overflowed with data. It is done using various open-loop (prevention) methods and closed-loop (recovery) methods.

2. Size of TCP segment header ranges between _____

- a) 16 and 32 bytes
- b) 16 and 32 bits
- c) 20 and 60 bytes
- d) 20 and 60 bits

Answer: c

Explanation: The size of the header can be 20 bytes at a minimum if there are no options and can go up to 60 bytes at maximum with 40 bytes in the options field. The header contains all the control information required to ensure ordered, error-free and reliable delivery of the segment.

3. Connection establishment in TCP is done by which mechanism?

- a) Flow control
- b) Three-Way Handshaking
- c) Forwarding
- d) Synchronization

Answer: b

Explanation: A three-way handshake allows both, the server and the client to choose their Initial Sequence Number and inform about it to the other party. This won't be possible using the two-way handshake mechanism.

4. The server program tells its TCP that it is ready to accept a connection. This process is called _____

- a) Active open
- b) Active close
- c) Passive close
- d) Passive open

Answer: d

Explanation: This is the first step in the Three-Way Handshaking process and is started by the server. Then the Client picks an ISN (Initial Sequence Number) and synchronizes (shares) it with the Server requesting a connection. The Server acknowledges the clients ISN, and then picks an ISN and synchronizes it with the Client. At last, the Client acknowledges the servers ISN.

5. A client that wishes to connect to an open server tells its TCP that it needs to be connected to that particular server. The process is called _____

- a) Active open
- b) Active close
- c) Passive close
- d) Passive open

Answer: a

Explanation: This is the second step in the Three-Way Handshaking process and is done by the client once it finds the open server and picks an ISN. The Server acknowledges the clients request, and then picks an ISN and synchronizes it with the Client. At last, the Client acknowledges the servers ISN.

6. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is _____

- a) Mutual open
- b) Mutual Close
- c) Simultaneous open
- d) Simultaneous close

Answer: c

Explanation: In simultaneous open situation, two nodes send an SYN signal to each other and start a TCP connection. Here, both TCP nodes transmit a SYNC+ACK segment to each other and a connection is established between them. This doesn't happen usually, because both sides have to know which port on the other side to send to.

7. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?

- a) SYNC flooding attack
- b) Active attack
- c) Passive attack
- d) Denial-of-service attack

Answer: a

Explanation: SYNC flooding attack is a form of Denial of Service attack. Due to the overflow of SYNC segments sent to the server, the victims are not able to request for a connection to the server, thus resulting in Denial of Service.

8. SYNC flooding attack belongs to a type of security attack known as _____

- a) SYNC flooding attack
- b) Active attack
- c) Passive attack
- d) Denial-of-service attack

Answer: d

Explanation: During SYNC flooding the system collapses and denies service to every request, making it a DoS attack. Some other DoS attacks are bandwidth flooding, connection flooding and UDP flooding.

9. The sizes of source and destination port address in TCP header are _____ respectively.

- a) 16-bits and 32-bits
- b) 16-bits and 16-bits
- c) 32-bits and 16-bits

- d) 32-bits and 32-bits

Answer: b

Explanation: All port addresses are of 16 bits and they specify the type of service being used by the network entity. For example, port 21 is used for FTP connections and port 25 is used for ICMP connections.

10. What allows TCP to detect lost segments and in turn recover from that loss?

- a) Sequence number
- b) Acknowledgment number
- c) Checksum
- d) Both Sequence & Acknowledgment number

Answer: b

Explanation: TCP header contains separate fields for sequence number and acknowledgment number. Comparing these values is what allows TCP to detect lost segments and in turn recover from that loss. After detecting the lost segments, the recovery may require retransmission of the lost segments of data.

1. Which of the following is false with respect to UDP?

- a) Connection-oriented
- b) Unreliable
- c) Transport layer protocol
- d) Low overhead

Answer: a

Explanation: UDP is an unreliable, connectionless transport layer protocol that provides message-based data transmission. TCP is an example of connection-oriented protocols.

2. Return value of the UDP port “Chargen” is _____

- a) String of characters
- b) String of integers
- c) Array of characters with integers
- d) Array of zero's and one's

Answer: a

Explanation: Using Chargen with UDP on port 19, the server sends a UDP datagram containing a random number of characters every time it receives a datagram from the connecting host. The number of characters is between 0 and 512.

3. Beyond IP, UDP provides additional services such as _____

- a) Routing and switching
- b) Sending and receiving of packets
- c) Multiplexing and demultiplexing
- d) Demultiplexing and error checking

Answer: d

Explanation: De-multiplexing is the delivering of received segments to the correct application layer processes at the recipients end using UDP. Error checking is done through checksum in UDP.

4. What is the main advantage of UDP?

- a) More overload
- b) Reliable
- c) Low overhead
- d) Fast

Answer: c

Explanation: As UDP does not provide assurance of delivery of packet, reliability and other services, the overhead taken to provide these services is reduced in UDP's operation. Thus, UDP provides low overhead, and higher speed.

5. Port number used by Network Time Protocol (NTP) with UDP is _____

- a) 161
- b) 123
- c) 162
- d) 124

Answer: b

Explanation: The Network Time Protocol is a clock synchronization network protocol implemented by using UDP port number 123 to send and receive time stamps.

6. What is the header size of a UDP packet?

- a) 8 bytes
- b) 8 bits
- c) 16 bytes
- d) 124 bytes

Answer: a

Explanation: The fixed size of the UDP packet header is 8 bytes. It contains four two-byte fields: Source port address, Destination port address, Length of packet, and checksum.

7. The port number is "ephemeral port number", if the source host is _____

- a) NTP
- b) Echo
- c) Server
- d) Client

Answer: d

Explanation: Port numbers from 1025 to 5000 are used as ephemeral port numbers in Windows Operating System. Ephemeral port numbers are short-lived port numbers which can be used for clients in a UDP system where there are temporary clients all the time.

8. "Total length" field in UDP packet header is the length of _____

- a) Only UDP header

- b) Only data
- c) Only checksum
- d) UDP header plus data

Answer: d

Explanation: Total length is the 16 bit field which contains the length of UDP header and the data. The maximum value of the Total length field and the maximum size of a UDP datagram is 65,535 bytes (8 byte header + 65,527 bytes of data).

9. Which is the correct expression for the length of UDP datagram?

- a) UDP length = IP length – IP header's length
- b) UDP length = UDP length – UDP header's length
- c) UDP length = IP length + IP header's length
- d) UDP length = UDP length + UDP header's length

Answer: a

Explanation: A user datagram is encapsulated in an IP datagram. There is a field in the IP header that defines the total length of the IP packet. There is another field in the IP header that defines the length of the header. So if we subtract the length of the IP header that is encapsulated in the IP packet, we get the length of UDP datagram.

10. The _____ field is used to detect errors over the entire user datagram.

- a) udp header
- b) checksum
- c) source port
- d) destination port

Answer: b

Explanation: Checksum field is used to detect errors over the entire user datagram. Though it is not as efficient as CRC which is used in TCP, it gets the job done for the UDP datagram as UDP doesn't have to ensure the delivery of the packet.

1. Which mode of IPsec should you use to assure the security and confidentiality of data within the same LAN?

- a) AH transport mode
- b) ESP transport mode
- c) ESP tunnel mode
- d) AH tunnel mode

Answer: b

Explanation: ESP transport mode should be used to ensure the integrity and confidentiality of data that is exchanged within the same LAN. ESP tunnel mode is comparatively more secure and should be used to assure the security of the data within different LANs.

2. Which two types of encryption protocols can be used to secure the authentication of computers using IPsec?

- a) Kerberos V5

- b) SHA
- c) MD5
- d) Both SHA and MD5

Answer: d

Explanation: SHA or MD5 can be used. Kerberos V5 is an authentication protocol, not an encryption protocol; therefore, answer A is incorrect. Certificates are a type of authentication that can be used with IPsec, not an encryption protocol; therefore, answer B is incorrect.

3. Which two types of IPsec can be used to secure communications between two LANs?

- a) AH tunnel mode
- b) ESP tunnel mode
- c) Both AH tunnel mode and ESP tunnel mode
- d) ESP transport mode

Answer: c

Explanation: The AH and ESP tunnel mode IPsec should be used for data transfer purpose, option d is for integrity & confidentiality purpose. Tunnel mode provides security for the entire original IP packet unlike transport mode which is not as secure as it only encrypts the data portion and not the whole packet.

4. _____ provides authentication at the IP level.

- a) AH
- b) ESP
- c) PGP
- d) SSL

Answer: a

Explanation: The Authentication Header (AH) authenticates the origin of data, and guarantees the integrity of the information that's being sent using IPsec. It also provides anti-reply security.

5. IPsec defines two protocols: _____ and _____

- a) AH; SSL
- b) PGP; ESP
- c) AH; ESP
- d) PGP; SSL

Answer: c

Explanation: AH ensures that there is no retransmission of data from an unauthorized source, and protects against data tampering. ESP provides content protection and ensures that there is integrity and confidentiality for the message.

6. IP Security operates in which layer of the OSI model?

- a) Network
- b) Transport
- c) Application

d) Physical

Answer: a

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

7. ESP does not provide _____

- a) source authentication
- b) data integrity
- c) privacy
- d) error control

Answer: d

Explanation: The ESP provides data confidentiality, integrity and authentication. It provides confidentiality through encryption. ESP can operate in two modes, transport mode and tunnel mode.

8. In computer security _____ means that computer system assets can be modified only by authorized parties.

- a) confidentiality
- b) integrity
- c) availability
- d) authenticity

Answer: b

Explanation: Integrity means that computer system assets can be modified only by authorized parties. Confidentiality means that the assets can only be accessed by authorized parties.

Availability refers to the accessibility of the resource to the authorized parties. Authenticity means that the asset is not unethically changed.

9. In computer security _____ means that the information in a computer system only be accessible for reading by authorized parties.

- a) confidentiality
- b) integrity
- c) availability
- d) authenticity

Answer: a

Explanation: Confidentiality means that the assets can only be accessed by authorized parties. Integrity means that computer system assets can be modified only by authorized parties. Availability refers to the accessibility of the resource to the authorized parties. Authenticity means that the asset is not unethically changed.

10. Which of the following organizations is primarily concerned with military encryption systems?

- a) NSA
- b) NIST

- c) IEEE
- d) ITU

Answer: a

Explanation: The NSA is primarily responsible for military encryption systems. The NSA designs, evaluates, and implements encryption systems for the military and government agencies with high security needs.

1. Two broad categories of congestion control are
 - a) Open-loop and Closed-loop
 - b) Open-control and Closed-control
 - c) Active control and Passive control
 - d) Active loop and Passive loop

Answer: a

Explanation: Open loop congestion control techniques are used to prevent congestion before it even happens by enforcing certain policies. Closed loop congestion control techniques are used to treat congestion after it has happened.

2. In open-loop control, policies are applied to _____
 - a) Remove after congestion occurs
 - b) Remove after sometime
 - c) Prevent before congestion occurs
 - d) Prevent before sending packets

Answer: c

Explanation: Open loop congestion control techniques are used to prevent congestion before it even happens by enforcing certain policies. Retransmission policy, window policy and acknowledgement policy are some policies that might be enforced.

3. Retransmission of packets must not be done when _____
 - a) Packet is lost
 - b) Packet is corrupted
 - c) Packet is needed
 - d) Packet is error-free

Answer: d

Explanation: Retransmission refers to the sender having to resend the packet to the receiver. It needs to be done only when some anomaly occurs with the packet like when the packet is lost or corrupted.

4. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends

-
- a) Packet which are not lost
 - b) Only those packets which are lost or corrupted
 - c) Packet from starting

d) All the packets

Answer: b

Explanation: In Selective Repeat, the sender side uses a searching algorithm to find the packets which need to be retransmitted based on the negative acknowledgements received and then resends only those packets thus saving bandwidth.

5. Discarding policy is mainly done by _____

- a) Sender
- b) Receiver
- c) Router
- d) Switch

Answer: c

Explanation: The discarding policy adopted by the routers mainly states that the routers discard sensitive or corrupted packets that it receives, thus controlling the integrity of the packet flow. The discarding policy is adopted as an open loop congestion control technique.

6. Closed-Loop control mechanisms try to _____

- a) Remove after congestion occurs
- b) Remove after sometime
- c) Prevent before congestion occurs
- d) Prevent before sending packets

Answer: a

Explanation: In closed loop congestion control, methods are implemented to remove congestion after it occurs. Some of the methods used are backpressure and choke packet.

7. The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as _____

- a) Admission policy
- b) Backpressure
- c) Forward signaling
- d) Backward signaling

Answer: b

Explanation: In this closed loop congestion control technique, the congested node propagates in the opposite direction of the data flow to inform the predecessor node to reduce the flow of packets. This is why this technique is called a node-to-node congestion control technique.

8. Backpressure technique can be applied only to _____

- a) Congestion networks
- b) Closed circuit networks
- c) Open circuit networks
- d) Virtual circuit networks

Answer: d

Explanation: In Virtual circuit networks, each node knows the upstream node from which a flow data is coming. So, it makes possible for the congested node to track the source of the congestion and then inform that node to reduce the flow to remove congestion.

9. The packet sent by a node to the source to inform it of congestion is called _____

- a) Explicit
- b) Discard
- c) Choke
- d) Backpressure

Answer: c

Explanation: Choke packet is sent by a node to the source to inform it of congestion. Two choke packet techniques can be used for the operation called hop-by-hop choke packet and source choke packet.

10. In the slow-start algorithm, the size of the congestion window increases _____ until it reaches a threshold.

- a) exponentially
- b) additively
- c) multiplicatively
- d) suddenly

Answer: a

Explanation: In slow-start algorithm, the size of the congestion window increases exponentially until it reaches a threshold. When it reaches the threshold, it stops increasing and continues sending packets through the threshold window thus preventing congestion.

11. In the congestion avoidance algorithm, the size of the congestion window increases _____ until congestion is detected.

- a) exponentially
- b) additively
- c) multiplicatively
- d) suddenly

Answer: b

Explanation: In the congestion avoidance algorithm, the size of the congestion window increases additively until congestion is detected. Once congestion is detected, the size of congestion window is decreased once and then the packets are transmitted to achieve congestion avoidance.

1. Which of the following is not a characteristic of Virtual Circuit Network?

- a) There are setup and teardown phases in addition to the data transfer phase
- b) Resources can be allocated during setup phase or on demand
- c) All packets follow the same path established during the connection
- d) Virtual circuit network is implemented in application layer

Answer: d

Explanation: Virtual circuit network is normally implemented in data link layer. It is a combination of circuit-switched network and datagram network which are implemented in the physical layer and network layer respectively.

2. The address that is unique in the scope of the network or internationally if the network is part of an international network is called as _____

- a) Global address
- b) Network address
- c) Physical address
- d) IP address

Answer: a

Explanation: Global address is a network address that is unique internationally and is used as a common address by all the users of the network. It is used to create a virtual circuit identifier.

3. The Identifier that is used for data transfer in virtual circuit network is called _____

- a) Global address
- b) Virtual circuit identifier
- c) Network identifier
- d) IP identifier

Answer: b

Explanation: A virtual circuit identifier is a type of numeric identifying address that is used to distinguish between different virtual circuits in a circuit-switched network. It is used for data transfer and has a switch scope.

4. Which of the following is not a phase of virtual circuit network?

- a) Setup phase
- b) Data transfer phase
- c) Termination phase
- d) Teardown phase

Answer: c

Explanation: There are three phases in a virtual circuit network: setup, data transfer and teardown phase. There is no termination phase in it.

5. Steps required in setup process are _____

- a) Setup request and acknowledgement
- b) Setup request and setup response
- c) Setup request and setup termination
- d) Setup and termination steps

Answer: a

Explanation: Setup request (sent by a source) and acknowledgement (sent by the destination) are the steps in the setup process. Both the ends' switches make table entries during the setup process.

6. During teardown phase, the source, after sending all the frames to destination, sends a _____ to notify termination.

- a) teardown response
- b) teardown request
- c) termination request
- d) termination response

Answer: b

Explanation: The source, after sending all the frames to destination sends teardown request to which, destination sends teardown response. The switches then delete the corresponding table entries.

7. Delay of the resource allocated during setup phase during data transfer is _____

- a) constant
- b) increases for each packet
- c) same for each packet
- d) different for each packet

Answer: c

Explanation: If a resource is allocated during setup phase, delay is same for each packet as there is only one-time delay during the setup phase and no delay during the data transfer phase.

8. Delay of the resource allocated on demand during data transfer is _____

- a) constant
- b) increases for each packet
- c) same for each packet
- d) different for each packet

Answer: d

Explanation: If a resource is to be allocated on demand during the data transfer phase, the delay for each packet would be different depending upon the resource requirement of the packets.

9. In virtual circuit network, the number of delay times for setup and teardown respectively are _____

- a) 1 and 1
- b) 1 and 2
- c) 2 and 1
- d) 2 and 2

Answer: a

Explanation: There is one-time delay for both setup and teardown phase. The one-time delay in setup phase is for resource allocation and the one-time delay in teardown phase is for the de-allocation of the resources.

10. In data transfer phase, how many columns does the table contain?

- a) 1
- b) 2

- c) 3
- d) 4

Answer: d

Explanation: The switch maintains a table for each Virtual Circuit Network. In the data transfer phase, it maintains 2 columns each for incoming data and outgoing data. The columns are in the following order: Source port, Source VCI, Destination port, Destination VCI.

1. ATM and frame relay are _____

- a) virtual circuit networks
- b) datagram networks
- c) virtual private networks
- d) virtual public networks

Answer: a

Explanation: ATM and frame relay are transmission modes in which information is transferred through electric circuit layer as packets. ATM has fixed packet size and frame relay has variable packet size.

2. ATM uses _____

- a) asynchronous frequency division multiplexing
- b) asynchronous time division multiplexing
- c) asynchronous space division multiplexing
- d) asynchronous amplitude division multiplexing

Answer: b

Explanation: ATM uses a constant data stream consisting of transmission cells to transmit information in a fixed division of time. The packet size remains fixed.

3. ATM standard defines _____ layers.

- a) 2
- b) 3
- c) 4
- d) 5

Answer: b

Explanation: The three layers are physical layer, ATM layer and application adoption layer. The physical layer corresponds to the physical layer, ATM layer corresponds to the data link layer and the AAL layer corresponds to the network layer of the OSI model.

4. ATM can be used for _____

- a) local area network
- b) wide area network
- c) campus area network
- d) networks covering any range

Answer: d

Explanation: ATM is a connection oriented network for cell relay which can be implemented for networks covering any area. It uses Time Division Multiplexing and supports voice, video and data communications.

5. An ATM cell has the payload field of _____

- a) 32 bytes
- b) 48 bytes
- c) 64 bytes
- d) 128 bytes

Answer: b

Explanation: An ATM cell contains a header and a payload. The header is of 5 bytes and the payload is of 48 bytes. The size of the header remains fixed.

6. Frame relay has error detection at the _____

- a) physical layer
- b) data link layer
- c) network layer
- d) transport layer

Answer: b

Explanation: The Frame Relay header contains an 8-bit Header Error Control field (HEC). The HEC field contains an 8-bit CRC which is used for error control.

7. Virtual circuit identifier in frame relay is called _____

- a) data link connection identifier
- b) frame relay identifier
- c) cell relay identifier
- d) circuit connection identifier

Answer: a

Explanation: The Data Link Connection Identifier is 10-bit virtual circuit identifier. It is used to assign frames to the specified Permanent Virtual Circuits or Switched Virtual Circuits.

8. Frame relay has _____

- a) only physical layer
- b) only data link layer
- c) only network layer
- d) both physical and data link layer

Answer: d

Explanation: The physical layer is guided by the protocols recognized by the ANSI. The data link layer supports the simplified core functions specified by the OSI model.

9. In frame relay networks, extended address is used _____

- a) to increase the range of data link connection identifiers
- b) for error detection

- c) for encryption
- d) for error recovery

Answer: a

Explanation: Extended address is indicated by the last bit of every address byte in the DLCI. It specifies whether the byte is the last in the addressing field. It is used to increase the range of data link connection identifiers.

10. What is FRAD in frame relay network?

- a) FRAD assembles and disassembles the frames coming from other protocols
- b) FRAD is used for modulation and demodulation
- c) FRAD is used for error detection
- d) FRAD is used for error recovery

Answer: a

Explanation: FRAD stands for Frame Relay Assembler/Disassembler. It converts packets into frames that can be transmitted over Frame Relay Networks. It operates at the physical layer.

1. Frame Relay is cheaper than other _____

- a) LANs
- b) WANs
- c) MANs
- d) Multipoint Networks

Answer: b

Explanation: Frame relay is a standardized wide area network technology and is popularly used because it is cheaper than leased line WANs. It is also very simple to configure user equipment in a Frame Relay network.

2. Frame Relay networks offer an option called _____

- a) Voice Over For Relay
- b) Voice Over Fine Relay
- c) Voice On Frame Relay
- d) Voice Over Frame Relay

Answer: d

Explanation: Frame Relay networks offer an option called Voice over Frame Relay, which transmits voice and voice-band data over a Frame Relay network. It has two sub-protocols FRF11 and FRF12.

3. There are _____ total features of Frame Relay.

- a) Five
- b) Seven
- c) Nine
- d) Ten

Answer: c

Explanation: Frame relay is a wide area network technology used to transmit information over a

network in the form of frames using relays. The frames are of variable size. It is cheaper than other WANs and it's simple to configure user equipment in the network.

4. Frame Relay does not provide flow or error control, they must be provided by the _____

- a) Lower Level Protocol
- b) Highest Level Protocol
- c) Upper Level Protocol
- d) Lowest Level Protocol

Answer: c

Explanation: Frame relay only provides error detection using CRC. If errors are detected, the upper-layer protocols, such as TCP are expected to provide error correction features. Network layer provides flow control.

5. Frame Relay deploys physical layer carriers such as _____

- a) ADMs
- b) UPSR
- c) BLSR
- d) SONET

Answer: d

Explanation: Frame Relays uses carriers such as SONET (for fiber-optic connections) to physically transmit data frames over a Frame Relay network. SONET is cheaper and provides better network reliability than other carriers.

6. Frame relay provides error detection at the _____

- a) physical layer
- b) data link layer
- c) network layer
- d) transport layer

Answer: b

Explanation: Frame relay provides error detection using CRC in the data link layer. The transport layer then provides the error correction features if an error is detected.

7. Virtual circuit identifier in frame relay is called _____

- a) data link connection identifier
- b) frame relay identifier
- c) cell relay identifier
- d) circuit connection identifier

Answer: a

Explanation: The Data Link Connection Identifier is 10-bit virtual circuit identifier. It is used to assign frames to the specified Permanent Virtual Circuits or Switched Virtual Circuits.

8. Frame relay has only _____

- a) physical layer
- b) data link layer

- c) physical layer and data link layer
- d) network layer and data link layer

Answer: c

Explanation: The physical layer is guided by the protocols recognized by the ANSI and provides conversion to frames. The data link layer supports the simplified core functions specified by the OSI model like error detection.

9. In frame relay networks, extended address is used _____

- a) to increase the range of data link connection identifiers
- b) for error detection
- c) for encryption
- d) for error recovery

Answer: a

Explanation: Extended address is indicated by the last bit of every address byte in the DLCI. It specifies whether the byte is the last in the addressing field. It is used to increase the range of data link connection identifiers.

10. What is FRAD in frame relay network?

- a) FRAD assembles and disassembles the frames coming from other protocols
- b) FRAD is used for modulation and demodulation
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- d) FRAD is used for error recovery

Answer: a

Explanation: FRAD stands for Frame Relay Assembler/Disassembler. It converts packets into frames that can be transmitted over Frame Relay Networks. It operates at the physical layer.

1. A piece of icon or image on a web page associated with another webpage is called _____

- a) url
- b) hyperlink
- c) plugin
- d) extension

Answer: b

Explanation: URLs are locators for resources present on the World Wide Web. A plugin provides extra functionality to the webpage. An extension provides modification allowance for the core functionality of a webpage. Hyperlink is piece of icon or image on a web page associated with another webpage.

2. Dynamic web page _____

- a) is same every time whenever it displays
- b) generates on demand by a program or a request from browser
- c) both is same every time whenever it displays and generates on demand by a program or a request from browser

d) is different always in a predefined order

Answer: b

Explanation: A dynamic web page provides different content every time the user opens it based on some events like new additions or time of the day. Languages such as JavaScript are used to respond to client-side events while languages such as PHP are used to respond to server-side events.

3. What is a web browser?

- a) a program that can display a web page
- b) a program used to view HTML documents
- c) it enables user to access the resources of internet
- d) all of the mentioned

Answer: d

Explanation: A web browser is an application program that is used to access the World Wide Web resources, applications and websites. Some examples of web browsers are Google Chrome, Internet Explorer and Safari.

4. Common gateway interface is used to _____

- a) generate executable files from web content by web server
- b) generate web pages
- c) stream videos
- d) download media files

Answer: a

Explanation: CGI is an interface through which servers can run execute console-based executable files on a web server that generates dynamic web pages. A CGI script executes only when a request is made. The script then generates HTML.

5. URL stands for _____

- a) unique reference label
- b) uniform reference label
- c) uniform resource locator
- d) unique resource locator

Answer: c

Explanation: The Uniform Resource Locator is a locator for the resource to be located by HTTP on the World Wide Web. The URL is derived from the Uniform Resource Identifier.

6. A web cookie is a small piece of data that is _____

- a) sent from a website and stored in user's web browser while a user is browsing a website
- b) sent from user and stored in the server while a user is browsing a website
- c) sent from root server to all servers
- d) sent from the root server to other root servers

Answer: a

Explanation: A web cookie is a small piece of data sent from a website and stored in user's web

browser while a user is browsing the website and is used to remember stateful information about the user's operations on the website. This can help the website provide a better browsing experience to the user.

7. Which one of the following is not used to generate dynamic web pages?

- a) PHP
- b) ASP.NET
- c) JSP
- d) CSS

Answer: d

Explanation: CSS alone cannot be used to generate dynamic web pages as it does not provide many event handling functions. It can be used along with JavaScript to generate dynamic web pages which are visually compelling.

8. An alternative to JavaScript on windows platform is _____

- a) VBScript
- b) ASP.NET
- c) JSP
- d) PHP

Answer: a

Explanation: VBScript is a general-purpose, lightweight and active scripting language which can be used on Microsoft Visual Basic. It was first released in 1996.

9. What is document object model (DOM)?

- a) convention for representing and interacting with objects in html documents
- b) application programming interface
- c) hierarchy of objects in ASP.NET
- d) scripting language

Answer: a

Explanation: DOM is a hierarchical model i.e. a tree used to represent an HTML or XML document. Every node of the tree an object that represents a part of the document.

10. AJAX stands for _____

- a) asynchronous javascript and xml
- b) advanced JSP and xml
- c) asynchronous JSP and xml
- d) advanced javascript and xml

Answer: a

Explanation: AJAX is a group of technologies that works on the client-side to create asynchronous web applications. It is used to modify only a part of a webpage and not the whole webpage whenever some event occurs.

1. Which of the following is not applicable for IP?

- a) Error reporting

- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling conventions

Answer: a

Explanation: The Internet Protocol is the networking protocol which establishes the internet by relaying datagrams across network boundaries. ICMP is a supporting protocol for IP which handles the Error Reporting functionality.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

Answer: c

Explanation: TOS-type of service identifies the type of packets. It is not related to fragmentation but is used to request specific treatment such as high throughput, high reliability or low latency for the IP packet depending upon the type of service it belongs to.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

Answer: c

Explanation: TTL stands for Time to Live. This field specifies the life of the IP packet based on the number of hops it makes (Number of routers it goes through). TTL field is decremented by one each time the datagram is processed by a router. When the value is 0, the packet is automatically destroyed.

4. If the value in protocol field is 17, the transport layer protocol used is _____

- a) TCP
- b) UDP
- c) ICMP
- d) IGMP

Answer: b

Explanation: The protocol field enables the demultiplexing feature so that the IP protocol can be used to carry payloads of more than one protocol type. Its most used values are 17 and 6 for UDP and TCP respectively. ICMP and IGMP are network layer protocols.

5. The data field cannot carry which of the following?

- a) TCP segment
- b) UDP segment
- c) ICMP messages

d) SMTP messages

Answer: c

Explanation: Data field usually has transport layer segments, but it can also carry ICMP messages. SMTP is an application layer protocol. First it must go through the transport layer to be converted into TCP segments and then it can be inserted into IP packets.

6. What should be the flag value to indicate the last fragment?

- a) 0
- b) 1
- c) TTL value
- d) Protocol field value

Answer: a

Explanation: The Flag field in the IP header is used to control and identify the fragments. It contains three bits: reserved, don't fragment and more fragments. If the more fragments bit is 0, it means that the fragment is the last fragment.

7. Which of these is not applicable for IP protocol?

- a) is connectionless
- b) offer reliable service
- c) offer unreliable service
- d) does not offer error reporting

Answer: b

Explanation: IP does not provide reliable delivery service for the data. It's dependent upon the transport layer protocols like TCP to offer reliability.

8. Which of the following demerits does Fragmentation have?

- a) complicates routers
- b) open to DOS attack
- c) overlapping of fragments.
- d) all of the mentioned

Answer: d

Explanation: Fragmentation makes the implementation of the IP protocol complex and can also be exploited by attackers to create a DOS attack such as a teardrop attack. Fragmentation won't be required if the transport layer protocols perform wise segmentation.

9. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) ttl
- d) identifier

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram.

The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

1. Which of these is not applicable for IP protocol?
 - a) Connectionless
 - b) Offer reliable service
 - c) Offer unreliable service
 - d) Does not offer error reporting

Answer: b

Explanation: IP does not provide reliable delivery service for the data. It's dependent upon the transport layer protocols like TCP to offer reliability.

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 - c) Overlapping of fragments
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Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

4. In classless addressing, there are no classes but addresses are still granted in _____
 - a) IPs
 - b) Blocks
 - c) Codes
 - d) Sizes

Answer: b

Explanation: In classless addressing, there are no classes but addresses are still granted in blocks. The total number of addresses in a block of classless IP addresses = $2^{(32 - \text{CIDR_value})}$.

5. In IPv4 Addresses, classful addressing is replaced with _____
 - a) Classless Addressing
 - b) Classful Addressing

- c) Classful Advertising
- d) Classless Advertising

Answer: a

Explanation: Classful addressing is replaced with classless addressing as a large ratio of the available addresses in a class in classful addressing is wasted. In classless addressing, one can reserve the number of IP addresses required by modifying the CIDR value and make sure that not many addresses are wasted.

6. First address in a block is used as network address that represents the _____

- a) Class Network
- b) Entity
- c) Organization
- d) Codes

Answer: c

Explanation: First address in a block is used as network address that represents the organization. The network address can be found by AND'ing any address in the block by the default mask. The last address in a block represents the broadcast address.

7. In classful addressing, a large part of available addresses are _____

- a) Organized
- b) Blocked
- c) Wasted
- d) Communicated

Answer: c

Explanation: In classful addressing, a large part of available addresses are wasted. Thus to solve this classful addressing is replaced with classless addressing where one can reserve the number of IP addresses required by modifying the CIDR value and make sure that not many addresses are wasted.

8. Network addresses are a very important concept of _____

- a) Routing
- b) Mask
- c) IP Addressing
- d) Classless Addressing

Answer: c

Explanation: Network addresses are a very important concept of IP addressing. The first address in a block is used as network address that represents the organization. The network address can be found by AND'ing any address in the block or class by the default mask.

9. Which of this is not a class of IP address?

- a) Class E
- b) Class C
- c) Class D

d) Class F

Answer: d

Explanation: Class F is not a class of IP addressing. There are only five classes of IP addresses: Class A (0.0.0.0 to 127.255.255.255), Class B (128.0.0.0 to 191.255.255.255), Class C (192.0.0.0 to 223.255.255.255), Class D (224.0.0.0 to 239.255.255.255), and Class E (240.0.0.0 to 255.255.255.255).

1. The size of an IP address in IPv6 is _____

- a) 4 bytes
- b) 128 bits
- c) 8 bytes
- d) 100 bits

Answer: b

Explanation: An IPv6 address is 128 bits long. Therefore, 2¹²⁸ i.e. 340 undecillion addresses are possible in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

2. The header length of an IPv6 datagram is _____

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram. There is one fixed header and optional headers which may or may not exist. The fixed header contains the mandatory essential information about the packet while the optional headers contain the optional “not that necessary” information.

3. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast-switching
- c) ToS field
- d) Option field

Answer: c

Explanation: The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the Type of Service field in the IPv4 header. It's an 8-bit field and its values are not defined in the RFC 2460.

4. IPv6 does not use _____ type of address.

- a) broadcast
- b) multicast
- c) anycast

d) unicast

Answer: a

Explanation: There is no concept of broadcast address in IPv6. Instead, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

5. Which among the following features is present in IPv6 but not in IPv4?

- a) Fragmentation
- b) Header checksum
- c) Options
- d) Anycast address

Answer: d

Explanation: There is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

6. The _____ field determines the lifetime of IPv6 datagram

- a) Hop limit
- b) TTL
- c) Next header
- d) Type of traffic

Answer: a

Explanation: The Hop limit value is decremented by one by a router when the datagram is forwarded by the router. When the value becomes zero the datagram is discarded. The field is 8-bits wide, so an IPv6 packet can live up to 255 router hops only.

7. Dual-stack approach refers to _____

- a) implementing Ipv4 with 2 stacks
- b) implementing Ipv6 with 2 stacks
- c) node has both IPv4 and IPv6 support
- d) implementing a MAC address with 2 stacks

Answer: c

Explanation: Dual-stack is one of the approaches used to support IPv6 in already existing systems. ISPs are using it as a method to transfer from IPv4 to IPv6 completely eventually due to the lower number of possible available addresses in IPv4.

8. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams, but they are connected to each other by intervening IPv4 routers. The best solution here is _____

- a) Use dual-stack approach
- b) Tunneling
- c) No solution
- d) Replace the system

Answer: b

Explanation: The IPv4 routers can form a tunnel in which at the sender's side, the IPv6 datagram is encapsulated in to IPv4, and at the receiver's side of the tunnel, the IPv4 packet is stripped and the IPv6 packet is sent to the receiver.

9. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits _____

- a) 96 to 127
- b) 0 to 63
- c) 80 to 95
- d) 64 to 79

Answer: a

Explanation: Teredo is a technique through which gives the possibility for full IPv6 network connectivity to IPv6 capable hosts which are currently on an IPv4 network. Bits 96 to 127 in the datagram represents obfuscated IPv4 address of the IPv4 network.

1. Dual-stack approach refers to _____

- a) Implementing IPv4 with 2 stacks
- b) Implementing IPv6 with 2 stacks
- c) Node has both IPv4 and IPv6 support
- d) Implementing a MAC address with 2 stacks

Answer: c

Explanation: Dual-stack is one of the approaches used to support IPv6 in already existing systems. ISPs are using it as a method to transfer from IPv4 to IPv6 completely eventually due to the lower number of possible available addresses in IPv4.

2. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams, but they are connected to each other by intervening IPv4 routers. The best solution here is _____

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Answer: a

Explanation: Teredo is a technique through which gives the possibility for full IPv6 network connectivity to IPv6 capable hosts which are currently on an IPv4 network. Bits 96 to 127 in the datagram represents obfuscated IPv4 address of the IPv4 network.

4. A link local address of local addresses is used in an _____

- a) Isolated router
- b) Isolated mask
- c) Isolated subnet
- d) Isolated net

Answer: c

Explanation: Isolated subnet is very huge sharing network area in this link local address of local addresses is used. A link local address can be configured on any subnet with the prefix "FE80::".

5. In subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called _____

- a) Unspecified address
- b) Loopback address
- c) Compatible address
- d) Mapped address

Answer: b

Explanation: In subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called loop back address. IPv6 loopback address is 0000:0000:0000:0000:0000:0000:0001. IPv4 loopback address is 127.0.0.1. It's a reserved address.

6. A few leftmost bits in each address of IPv6 address define its category is called _____

- a) Prefix type
- b) Postfix type
- c) Reserved type
- d) Local type

Answer: a

Explanation: Prefix is the bits in the IP address which are placed in leftmost position. A network prefix in IPv6 is given by a CIDR format-like number at the end of the address.

7. In IPv6 addresses, addresses that start with eight 0s are called _____

- a) Unicast addresses
- b) Multicast addresses
- c) Any cast addresses
- d) Reserved addresses

Answer: d

Explanation: In IPv6 address format, the starting bits are specified with eight 0s to represent

reserved addresses. These reserved addresses have a certain function pre-defined like the loop-back address is used to test a network card. Reserved addresses cannot be allotted to a machine.

8. Which statement(s) about IPv6 addresses are true?

- a) Leading zeros are required
- b) Two colons (::) are used to represent successive hexadecimal fields of zeros
- c) Two colons (::) are used to separate fields
- d) A single interface cannot have multiple IPv6 addresses of different types

Answer: b

Explanation: In order to shorten the written length of an IPv6 address, successive fields of zeros may be replaced by double colons. In trying to shorten the address further, leading zeros may also be removed. Just as with IPv4, a single device's interface can have more than one address; with IPv6 there are more types of addresses and the same rule applies. There can be link-local, global unicast, and multicast addresses all assigned to the same interface.

9. When was IPv6 launched?

- a) June 2, 2012
- b) June 4, 2012
- c) June 5, 2012
- d) June 6, 2012

Answer: d

Explanation: IPv6 is the latest version of the Internet Protocol released on 6th June 2012. An IPv6 address is 128 bits long. Therefore, 2^{128} i.e. 340 undecillion addresses are possible in IPv6.

1. Which layer is responsible for process-to-process delivery?

- a) Physical layer
- b) Network layer
- c) Transport layer
- d) Application layer

Answer: c

Explanation: The transport layer is responsible for process-to-process delivery, error control and flow control. It provides an interface for the implementation of process to process delivery through ports. There are 65,535 port numbers.

2. In process-to-process delivery, two processes communicate in which of the following methods?

- a) Client/Server
- b) Source/Destination
- c) Message Transfer
- d) Peer to Peer

Answer: a

Explanation: The most common method used for this communication is Client/Server. The client requests a service through a particular port number to the port of the server using its socket address. Then the server responds by giving the requested service to the client port.

3. Multiple processes on destinations at transport layer are identified by _____

- a) Mac address
- b) Port number
- c) Host number
- d) Host address

Answer: b

Explanation: Multiple processes on destinations are identified by a transport layer address also called as port number. The IP address along with the port number is called the socket address.

4. Range of port numbers in Internet model is _____

- a) 0 and 32,765(8-bit)
- b) 0 and 32,765(16-bit)
- c) 0 and 65,535(32-bit)
- d) 0 and 65,535(16-bit)

Answer: d

Explanation: Port numbers are 16-bit integers between 0 and 65,535. They are an interface for the implementation of process to process delivery for the transport layer.

5. According to Internet Assigned Numbers Authority (IANA), which of the following ranges is not a part of port number ranges?

- a) Well-known ports
- b) Registered ports
- c) Dynamic ports
- d) Static ports

Answer: d

Explanation: IANA divided port numbers into three ranges i.e., Well-known, Registered and Dynamic ports. Well-known port numbers range from 0 to 1023, registered port numbers are from 1024 to 49151 and dynamic port numbers are from 49152 to 65535.

6. The combination of an IP address and port number is called as _____

- a) Socket address
- b) Port address
- c) MAC address
- d) Host address

Answer: a

Explanation: Socket address is the combination of an IP address and a port number and it is used to define the client-end and server-end processes uniquely.

7. Which of the following is false with respect to Connectionless service of transport layer protocol?

- a) Packets are not numbered
- b) Packets are not delayed
- c) No acknowledgement

d) Packet may arrive out of sequence

Answer: b

Explanation: There is a high probability in connectionless services like UDP that the packet gets delayed or lost because there is no connection made between the two end nodes. No connection means that there is no unique pathway for the packets to travel.

8. Correct order in the process of Connection-Oriented services is _____

- i. Data transfer
 - ii. Connection release
 - iii. Connection establishment
- a) i-ii-iii
 - b) iii-ii-i
 - c) ii-i-iii
 - d) iii-i-ii

Answer: d

Explanation: First the client has to request a connection and the server has to accept the connection to establish a connection. Then data transfer can start between the two ends. Then both client and server need to terminate their ends to terminate the connection.

9. In transport layer, Multiplexing is done at _____

- a) Channel
- b) Receiver site
- c) Sender site
- d) Packet

Answer: c

Explanation: At the sender's side, there are multiple processes which may want to send packets. But there is only one transport layer protocol like TCP or UDP working at a time. So the transport layer protocol gets the messages from these processes and separates them with different port numbers. This process is called multiplexing and it is done before sending packets to the receivers side.

10. The process of error checking and dropping of the header, delivering messages to appropriate process based on port number is called as _____

- a) Delivery of packets
- b) Error correction
- c) Multiplexing
- d) Demultiplexing

Answer: d

Explanation: Demultiplexing is the process of error checking and dropping of the header, delivering messages to appropriate process based on port number. The transport layer does this on the receiver's end after the packet is received and takes help of the header attached by the sender's side transport layer during multiplexing.

1. Internet Control Message Protocol (ICMP) has been designed to compensate _____
- a) Error-reporting
 - b) Error-correction
 - c) Host and management queries
 - d) All of the mentioned

Answer: d

Explanation: IP by itself does not provide the features of error reporting or error correction. So, to address these issues a network layer protocol called Internet Control Message Protocol is used. ICMP operates over the IP packet to provide error reporting functionality.

2. Header size of the ICMP message is _____
- a) 8-bytes
 - b) 8-bits
 - c) 16-bytes
 - d) 16-bits

Answer: a

Explanation: An ICMP message has an 8-byte header and a variable size data section. Out of the 8 bytes, the first 4 bytes are of a fixed format having the type, code and checksum fields and the next 4 bytes depend upon the type of the message.

3. During error reporting, ICMP always reports error messages to _____
- a) Destination
 - b) Source
 - c) Next router
 - d) Previous router

Answer: b

Explanation: ICMP notifies the source about the error when an error is detected because the datagram knows information about source and destination IP address. The source can then retransmit the data again or try to correct those errors.

4. Which of these is not a type of error-reporting message?
- a) Destination unreachable
 - b) Source quench
 - c) Router error
 - d) Time exceeded

Answer: c

Explanation: Router error is not a type of error-reporting message in ICMP. The type of error reporting message is specified in the ICMP header. Destination unreachable is type 3 error message, source quench is type 4, and time exceeded is type 11 error message.

5. ICMP error message will not be generated for a datagram having a special address such as _____
- a) 127.0.0.0

- b) 12.1.2
- c) 11.1
- d) 127

Answer: a

Explanation: 127.0.0.0 is a special address known as the loopback address which is used for testing purpose of a machine without actually communicating with a network. Thus no error reporting message will be generated for such special addresses.

6. When a router cannot route a datagram or host cannot deliver a datagram, the datagram is discarded and the router or the host sends a _____ message back to the source host that initiated the datagram.

- a) Destination unreachable
- b) Source quench
- c) Router error
- d) Time exceeded

Answer: a

Explanation: Router sends destination unreachable message if the destination is not found.

Destination unreachable is type 3 error reporting message. It is invoked when the router can't find a path to the intended destination to forward the packet through.

7. The source-quench message in ICMP was designed to add a kind of _____ to the IP.

- a) error control
- b) flow control
- c) router control
- d) switch control

Answer: b

Explanation: Firstly, it informs the source that the datagram has been discarded. Secondly, it warns the source that there is congestion in the network. It's type 4 error reporting message after which the source is expected to reduce the flow of packets.

8. In case of time exceeded error, when the datagram visits a router, the value of time to live field is _____

- a) Remains constant
- b) Decrement by 2
- c) Incremented by 1
- d) Decrement by 1

Answer: d

Explanation: This field will be decremented by 1 at every router, and will be zero by the time it reaches source. This error reporting message is type 11 and is used to prevent the router from travelling forever in case some unknown path anomaly occurs.

9. Two machines can use the timestamp request and timestamp replay messages to determine the _____ needed for an IP datagram to travel between them.

- a) Half-trip time
- b) Round-trip time
- c) Travel time for the next router
- d) Time to reach the destination/source

Answer: b

Explanation: The round-trip time refers to the total time taken combining the time taken for a packet sent from a source to reach a destination and the time taken for the acknowledgement sent by the destination to reach the source. The Router sends destination unreachable message if the destination is not found.

10. During debugging, we can use the _____ program to find if a host is alive and responding.

- a) traceroute
- b) shell
- c) ping
- d) java

Answer: c

Explanation: Ping program is used to find if a host is alive and responding. It is to be entered into a command line with the syntax “ping (IP address)” to be executed. Traceroute is a program used to find the shortest route to the destination IP.

11. In windows _____ can be used to trace the route of the packet from the source to the destination.

- a) traceroute
- b) tracert
- c) ping
- d) locator

Answer: b

Explanation: Tracert is used in case of windows, whereas Traceroute in UNIX. Tracert is a program used to find the shortest route to the destination IP. The Router sends destination unreachable message if a path to the destination IP is not found.

12. In a simple echo-request message, the value of the sum is 01010000 01011100. Then, value of checksum is _____

- a) 10101111 10100011
- b) 01010000 01011100
- c) 10101111 01011100
- d) 01010000 10100011

Answer: a

Explanation: The sender side adds the bits of the fragmented packet to find a sum. Checksum is the compliment of the sum (exchange 0's and 1's). The receiver then has to verify the checksum by adding the bits of the received packet to ensure that the packet is error-free.

1. The main reason for transition from IPv4 to IPv6 is _____
- a) Huge number of systems on the internet
 - b) Very low number of system on the internet
 - c) Providing standard address
 - d) To provide faster internet

Answer: a

Explanation: Due to huge number of systems on the internet and the lower number of available addresses on IPv4, transition from IPv4 to IPv6 needs to happen. IPv4 provides around 4 billion unique IP addresses whereas IPv6 provides over 340 undecillion unique IP addresses.

2. Which of the following is not a transition strategy?
- a) Dual stack
 - b) Tunneling
 - c) Conversion
 - d) Header translation

Answer: c

Explanation: As IPv4 addresses are of 32 bits and IPv6 addresses are of 128 bits, it is not possible to convert IPv4 address to IPv6 address. So, Dual stack, tunneling and header translation are the three strategies which might help in the transition from IPv4 to IPv6.

3. To determine which version to use when sending a packet to a destination, the source host queries which of the following?
- a) Dual stack
 - b) Domain Name Server
 - c) Header information
 - d) Transport layer

Answer: b

Explanation: Source host queries DNS to determine which version to use when sending a packet to a destination. The DNS contains both, the IPv4 and IPv6 addresses of the modern dual stack host servers.

4. The strategy used when two computers using IPv6 want to communicate with each other and the packet must pass through a region that uses IPv4 is _____
- a) Dual stack
 - b) Header translation
 - c) Conversion
 - d) Tunneling

Answer: d

Explanation: In tunneling, The IPv4 routers can form a tunnel in which at the sender's side, the IPv6 datagram is encapsulated in to IPv4, and at the receiver's side of the tunnel, the IPv4 packet is stripped and the IPv6 packet is sent to the receiver.

5. The correct format of packet in tunnel that uses IPv4 region is _____

- i. IPv6 header
 - ii. Payload
 - iii. IPv4 header
- a) iii-i-ii
 - b) iii-ii-i
 - c) i-ii-iii
 - d) i-iii-ii

Answer: a

Explanation: At the sender's side, the IPv6 datagram is encapsulated in to IPv4 i.e. An IPv4 header is inserted on top of the IPv6 header, and then the packet is sent through the tunnel.

6. _____ is necessary when the sender wants to use IPv6, but the receiver does not understand IPv6.

- a) Dual stack
- b) Header translation
- c) Conversion
- d) Tunneling

Answer: b

Explanation: Header translation is used when the sender wants to use IPv6, but the receiver does not understand IPv6. It is made possible through a Network Address Translation – Protocol Translation enabled device such as a gateway.

7. Header translation uses _____ to translate an IPv6 address to an IPv4 address.

- a) IP address
- b) Physical address
- c) Mapped address
- d) MAC address

Answer: c

Explanation: A mapped IPv6 address contains the IPv4 address in its last 32-bits and is preceded by 16 1s and 80 0s. It can be used to translate an IPv6 address to an IPv4 address.

8. Which of the following is not a step in the Header translation procedure?

- a) The IPv6 mapped address is changed to an IPv4 address by extracting the rightmost 32bits
- b) The value of the IPv6 priority field is discarded
- c) The type of service field in IPv4 is set to zero
- d) The IPv6 flow label is considered

Answer: d

Explanation: In the header translation procedure, first the IPv6 mapped address is changed to an IPv4 address by extracting the rightmost 32bits, then the value of the IPv6 priority field is discarded, and finally the ToS field in the IPv4 header is set to zero. IPv6 flow label is ignored in the procedure.

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling

Answer: a

Explanation: The Internet Protocol is the networking protocol that establishes the internet by relaying datagram across network boundaries. ICMP is a supporting protocol for IP which handles the Error Reporting functionality.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

Answer: c

Explanation: TOS-type of service identifies the type of packets. It is not related to fragmentation but is used to request specific treatment such as high throughput, high reliability or low latency for the IP packet depending upon the type of service it belongs to.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

Answer: c

Explanation: TTL stands for Time to Live. This field specifies the life of the IP packet based on the number of hops it makes (Number of routers it goes through). TTL field is decremented by one each time the datagram is processed by a router. When the value is 0, the packet is automatically destroyed.

4. If the value in protocol field is 17, the transport layer protocol used is _____

- a) TCP
- b) UDP
- c) ICMP
- d) IGMP

Answer: b

Explanation: The protocol field enables the demultiplexing feature so that the IP protocol can be used to carry payloads of more than one protocol type. Its most used values are 17 and 6 for UDP and TCP respectively. ICMP and IGMP are network layer protocols.

5. Which field helps to check rearrangement of the fragments?

- a) offset

- b) flag
- c) ttl
- d) identifier

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

6. The size of an IP address in IPv6 is _____

- a) 4bytes
- b) 128bits
- c) 8bytes
- d) 100bits

Answer: b

Explanation: An IPv6 address is 128 bits long. Therefore, 2^{128} i.e. 340 undecillion unique addresses are available in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

7. The header length of an IPv6 datagram is _____

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram. There is one fixed header and optional headers which may or may not exist. The fixed header contains the mandatory essential information about the packet while the optional headers contain the optional “not that necessary” information.

8. In an IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast switching
- c) TOS field
- d) Option field

Answer: c

Explanation: The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the Type of Service field in the IPv4 header. It's an 8-bit field and its values are not defined in the RFC 2460.

9. IPv6 does not use _____ type of address.

- a) Broadcast
- b) Multicast
- c) Any cast

d) Unicast

Answer: a

Explanation: There is no concept of broadcast address in IPv6. Instead, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

10. Which are the features present in IPv4 but not in IPv6?

- a) Fragmentation
- b) Header checksum
- c) Options
- d) Anycast address

Answer: d

Explanation: There is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

1. Which of the following is the broadcast address for a Class B network ID using the default subnetmask?

- a) 172.16.10.255
- b) 255.255.255.255
- c) 172.16.255.255
- d) 172.255.255.255

Answer: c

Explanation: In this case, the class B network ID is 172.16.0.0. We know that the default mask of a class B network is 255.255.0.0. If we OR any address in a network with the complement of the default mask (0.0.255.255), we get the broadcast address of the network. In this case, the result of OR would be 172.16.255.255.

2. You have an IP address of 172.16.13.5 with a 255.255.255.128 subnet mask. What is your class of address, subnet address, and broadcast address?

- a) Class A, Subnet 172.16.13.0, Broadcast address 172.16.13.127
- b) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.127
- c) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.255
- d) Class B, Subnet 172.16.0.0, Broadcast address 172.16.255.255

Answer: b

Explanation: We know that the prefix 172 lies in class B (128 to 191) of IPv4 addresses. From the subnet mask, we get that the class is divided into 2 subnets: 172.16.13.0 to 172.16.13.127 and 172.16.13.128 to 172.16.13.255. The IP 172.16.13.5 lies in the first subnet. So the starting address 172.16.13.0 is the subnet address and last address 172.16.13.127 is the broadcast address.

3. If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?

- a) 255.255.255.252
- b) 255.255.255.255
- c) 255.255.255.240

d) 255.255.255.248

Answer: c

Explanation: If you have eight networks and each requires 10 hosts, you would use the Class C mask of 255.255.255.240. Why? Because 240 in binary is 11110000, which means you have four subnet bits and four host bits. Using our math, we'd get the following:

$2^4=16$ subnets

$2^4=16$ hosts.

4. The combination of _____ and _____ is often termed the local address of the local portion of the IP address.

- a) Network number and host number
- b) Network number and subnet number
- c) Subnet number and host number
- d) Host number

Answer: c

Explanation: It is termed as the local address because the address won't be applicable outside the subnet. Sub networking is implemented for remote sensing in transparent way from that host which is contained in the sub network which called a local operation.

5. _____ implies that all subnets obtained from the same subnet mask.

- a) Static subnetting
- b) Dynamic subnetting
- c) Variable length subnetting
- d) Dynamic length subnetting

Answer: a

Explanation: Static subnetting is used when the requirement is of same number of hosts in each subnet for the institution. The same subnet mask can be used to find the subnet id of each subnet. It is usually used to divide large networks into smaller parts.

6. State whether true or false.

i) A connection oriented protocol can only use unicast addresses.

ii) The any cast service is included in IPv6.

- a) True, True
- b) True, False
- c) False, True
- d) False, False

Answer: a

Explanation: In a connection oriented protocol, the host can only establish connection with another host on one unique channel, that's why it can only use unicast addresses. In IPv6, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network.

7. _____ is a high performance fiber optic token ring LAN running at 100 Mbps over distances upto 1000 stations connected.

- a) FDDI
- b) FDDT
- c) FDDR
- d) FOTR

Answer: a

Explanation: FDDI stands for Fiber Distributed Data Interface. It is a set of standards for fiber optic token ring LANs running at 100 Mbps over distances up to 200 km in diameter and 1000 stations connected.

8. Which of the following are Gigabit Ethernets?

- a) 1000 BASE-SX
- b) 1000 BASE-LX
- c) 1000 BASE-CX
- d) All of the mentioned

Answer: d

Explanation: In computer networking, Gigabit Ethernet (GbE or 1 GigE) is a term describing various technologies for transmitting Ethernet frames at a rate of a gigabit per second (1,000,000,000 bits per second), as defined by the IEEE 802.3-2008 standard. It came into use beginning in 1999, gradually supplanting Fast Ethernet in wired local networks, as a result of being considerably faster.

9. _____ is a collective term for a number of Ethernet Standards that carry traffic at the nominal rate of 1000 Mbit/s against the original Ethernet speed of 10 Mbit/s.

- a) Ethernet
- b) Fast Ethernet
- c) Gigabit Ethernet
- d) Gigabyte Ethernet

Answer: b

Explanation: Fast Ethernet is a set of Ethernet Standards which were introduced in 1995, that carry traffic at the nominal rate of 1000 Mbit/s. 100BASE-TX is the most commonly used Fast Ethernet standard.

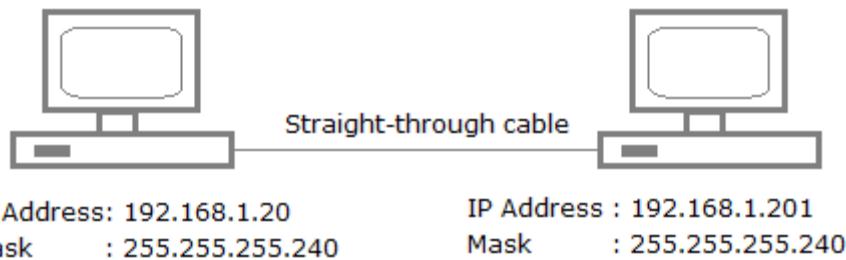
10. _____ is another kind of fiber optic network with an active star for switching.

- a) S/NET
- b) SW/NET
- c) NET/SW
- d) FS/NET

Answer: a

Explanation: A 50-MBd active star fiber optical Local area network (LAN) and its optical combiner and mixing rod splitter are presented. The limited power budget and relatively large tapping losses of light wave technology, which limit the use of fiber optics in tapped bus LAN topologies, are examined and proven tolerable in optical star topologies.

1. A network administrator is connecting hosts A and B directly through their Ethernet interfaces, as shown in the illustration. Ping attempts between the hosts are unsuccessful. What can be done to provide connectivity between the hosts?



- i. A crossover cable should be used in place of the straight-through cable.
 - ii. A rollover cable should be used in place of the straight-through cable.
 - iii. The subnet masks should be set to 255.255.255.192.
 - iv. A default gateway needs to be set on each host.
 - v. The subnet masks should be set to 255.255.255.0.
- a) i only
 - b) ii only
 - c) iii and iv only
 - d) i and v only

Answer: d

Explanation: First, if you have two hosts directly connected, as shown in the graphic, then you need a crossover cable. A straight-through cable won't work. Second, the hosts have different masks, which puts them in different subnets. The easy solution is just to set both masks to 255.255.255.0 (/24).

2. Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?
- i. 172.16.1.100
 - ii. 172.16.1.198
 - iii. 172.16.2.255
 - iv. 172.16.3.0
- a) i only
 - b) ii and iii only
 - c) iii and iv only
 - d) ii only

Answer: c

Explanation: The router's IP address on the E0 interface is 172.16.2.1/23, which is 255.255.254.0. This makes the third octet a block size of 2. The router's interface is in the 172.16.2.0 subnet, and

the broadcast address is 172.16.3.255 because the next subnet is 172.16.4.0. The valid host range is 172.16.2.1 to 172.16.3.254. The router is using the first valid host address in the range.

3. Which two statements describe the IP address 10.16.3.65/23?
- i. The subnet address is 10.16.3.0 255.255.254.0.
 - ii. The lowest host address in the subnet is 10.16.2.1 255.255.254.0.
 - iii. The last valid host address in the subnet is 10.16.2.254 255.255.254.0.
 - iv. The broadcast address of the subnet is 10.16.3.255 255.255.254.0.
- a) i and iii
 - b) ii and iv
 - c) i, ii and iv
 - d) ii, iii and iv

Answer: b

Explanation: The mask 255.255.254.0 (/23) used with a Class A address means that there are 15 subnet bits and 9 host bits. The block size in the third octet is 2 (256 – 254). So this makes the subnets in the interesting octet 0, 2, 4, 6, etc., all the way to 254. The host 10.16.3.65 is in the 10.16.2.0 subnet. The next subnet is 10.16.4.0, so the broadcast address for the 10.16.2.0 subnet is 10.16.3.255. The valid host addresses are 10.16.2.1 to 10.16.3.254.

4. What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?
- a) 14
 - b) 15
 - c) 16
 - d) 30

Answer: d

Explanation: A /27 (255.255.255.224) is 3 bits on and 5 bits off. This provides 8 subnets, each with 30 hosts. Does it matter if this mask is used with a Class A, B, or C network address? Not at all. The number of host bits would never change.

5. You need to subnet a network into 5 subnets, each with at least 16 hosts. Which classful subnet mask would you use?
- a) 255.255.255.192
 - b) 255.255.255.224
 - c) 255.255.255.240
 - d) 255.255.255.248

Answer: b

Explanation: You need 5 subnets, each with at least 16 hosts. The mask 255.255.255.240 provides 16 subnets with 14 hosts which is less than 16, so this will not work. The mask 255.255.255.224 provides 8 subnets, each with 30 hosts so this may work. The mask 255.255.255.192 provides 4 subnets, each with 60 hosts so this may work. Comparing both the possible masks, 255.255.255.224 provides the best answer.

6. You have a network that needs 29 subnets while maximizing the number of host addresses available on each subnet. How many bits must you borrow from the host field to provide the correct subnet mask?

- a) 2
- b) 3
- c) 4
- d) 5

Answer: d

Explanation: A 240 mask is 4 subnet bits and provides 16 subnets, each with 14 hosts. We need more subnets, so let's add subnet bits. One more subnet bit would be a 248 mask. This provides 5 subnet bits (32 subnets) with 3 host bits (6 hosts per subnet). This is the best answer.

7. If an Ethernet port on a router were assigned an IP address of 172.16.112.1/25, what would be the valid subnet address of this host?

- a) 172.16.112.0
- b) 172.16.0.0
- c) 172.16.96.0
- d) 172.16.255.0

Answer: a

Explanation: A /25 mask is 255.255.255.128. Used with a Class B network, the third and fourth octets are used for subnetting with a total of 9 subnet bits, 8 bits in the third octet and 1 bit in the fourth octet. Since there is only 1 bit in the fourth octet, the bit is either off or on-which is a value of 0 or 128. The host in the question is in the 0 subnet, which has a broadcast address of 127 since 128 is the next subnet

8. You have an interface on a router with the IP address of 192.168.192.10/29. Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?

- a) 6
- b) 8
- c) 30
- d) 32

Answer: a

Explanation: A /29 (255.255.255.248), regardless of the class of address, has only 3 host bits. Six hosts are the maximum number of hosts on this LAN, including the router interface. Out of the 8 addresses possible with the host bits, the first and the last address are for the subnet id and broadcast address respectively.

9. What is the subnet id of a host with an IP address 172.16.66.0/21?

- a) 172.16.36.0
- b) 172.16.48.0
- c) 172.16.64.0
- d) 172.16.0.0

Answer: c

Explanation: A /21 is 255.255.248.0, which means we have a block size of 8 in the third octet, so we just count by 8 until we reach 66. The subnet in this question is 64.0. The next subnet is 72.0, so the broadcast address of the 64 subnet is 71.255.

10. The network address of 172.16.0.0/19 provides how many subnets and hosts?

- a) 7 subnets, 30 hosts each
- b) 8 subnets, 8,190 hosts each
- c) 8 subnets, 2,046 hosts each
- d) 7 subnets, 2,046 hosts each

Answer: b

Explanation: A CIDR address of /19 is 255.255.224.0. This is a Class B address, so that is only 3 subnet bits, but it provides 13 host bits, or 8 subnets, each with 8,190 hosts.

1. Which type of Ethernet framing is used for TCP/IP and DEC net?

- a) Ethernet 802.3
- b) Ethernet 802.2
- c) Ethernet II
- d) Ethernet SNAP

Answer: c

Explanation: The Ethernet 802.3 framing is used for NetWare versions 2 to 3.11, and the Ethernet 802.2 framing is used for NetWare versions 3.12 and later plus OSI routing, Ethernet II is used with TCP/IP and DEC net, and Ethernet SNAP is used with TCP/IP and AppleTalk. The type field in Ethernet 802.2 frame is replaced by a length field in Ethernet 802.3.

2. Consider a situation in which you are a system administrator on a NetWare network, you are running NetWare 4.11 and you cannot communicate with your router. What is the likely problem?

- a) NetWare 4.11 defaults to 802.2 encapsulation
- b) NetWare 4.11 defaults to 802.3 encapsulation
- c) Cisco routers only work with NetWare 3.11
- d) NetWare 3.11 defaults to 802.2 encapsulation

Answer: a

Explanation: The default encapsulation on Cisco routers is Novell Ethernet_802.3 and NetWare 3.12 and later defaults to 802.2 encapsulation, 3.11 and earlier defaults to 802.3.

3. NetWare IPX addressing uses a network number and a node number. Which statement is not true?

- a) The network address is administratively assigned and can be up to 16 hexadecimal digits long
- b) The node address is always administratively assigned
- c) The node address is usually the MAC address
- d) If the MAC address is used as the node address, then IPX eliminates the use of ARP

Answer: b

Explanation: The network address can be up to 16 hexadecimal digits in length. The node number is 12 hexadecimal digits. The node address is usually the MAC address. An example IPX address is 4a1d.0000.0c56.de33. The network part is 4a1d. The node part is 0000.0c56.de33. The network number is assigned by the system administrator of the Novell network and the MAC address/node address is not assigned by the administrator.

4. Which NetWare protocol works on layer 3—network layer—of the OSI model?

- a) IPX
- b) NCP
- c) SPX
- d) NetBIOS

Answer: a

Explanation: IPX (Internetwork Packet Exchange) is the NetWare network layer 3 protocol used for transferring information on LANs that use Novell's NetWare.

5. Which NetWare protocol provides link-state routing?

- a) NLSP
- b) RIP
- c) SAP
- d) NCP

Answer: a

Explanation: NetWare Link Services Protocol (NLSP) provides link-state routing. SAP (Service Advertisement Protocol) advertises network services. NCP (NetWare Core Protocol) provides client-to-server connections and applications. RIP is a distance vector routing protocol. NLSP was developed by Novell to replace RIP routing protocols.

6. As a system administrator, you want to debug IGRP but are worried that the “debug IP IGRP transaction” command will flood the console. What is the command that you should use?

- a) Debug IP IGRP event
- b) Debug IP IGRP-events
- c) Debug IP IGRP summary
- d) Debug IP IGRP events

Answer: d

Explanation: The “debug IP IGRP events” is used to display a short summary of IGRP routing information. You can append an IP address onto either console's command-line to see only the IGRP updates from a neighbor. The command will only give a short summary and hence won't flood the command line.

7. What does the following series of commands “Router IGRP 71 network” accomplish?

- ```
10.0.0.0 router IGRP 109 network 172.68.7.0
```
- a) It isolates networks 10.0.0.0 and 172.68.7.0
  - b) It loads IGRP for networks 109 and 71
  - c) It disables RIP

- d) It disables all routing protocols

Answer: a

Explanation: It isolates network 10.0.0.0 and 172.68.7.0 and associates autonomous systems 109 and 71 with IGRP. IGRP does not disable RIP, both can be used at the same time.

8. The “IPX delay number” command will allow an administrator to change the default settings.

What are the default settings?

- a) For LAN interfaces, one tick; for WAN interfaces, six ticks
- b) For LAN interfaces, six ticks; for WAN interfaces, one tick
- c) For LAN interfaces, zero ticks; for WAN interfaces, five ticks
- d) For LAN interfaces, five ticks; for WAN interfaces, zero Ticks

Answer: a

Explanation: Tick is basically the update rate of clients in the network. The IPX delay number will give the ticks at a certain time. The default ticks are—for LAN interfaces, one tick, and for WAN interfaces, six ticks.

9. As a system administrator, you need to set up one Ethernet interface on the Cisco router to allow for both sap and Novell-ether encapsulations. Which set of commands will accomplish this?

- a) Interface Ethernet 0.1 IPX encapsulation Novell-ether IPX network 9e interface  
Ethernet 0.2 IPX network 6c
- b) Interface Ethernet 0 IPX encapsulation Novell-ether IPX network 9e interface  
Ethernet 0 IPX encapsulation sap IPX network 6c
- c) Interface Ethernet 0.1 IPX encapsulation Novell-ether interface Ethernet 0.2 IPX  
encapsulation sap
- d) Interface Ethernet 0.1ipx encapsulation Novell-ether IPX network 9e interface  
Ethernet 0.2 IPX encapsulation sap IPX network 6c

Answer: d

Explanation: The following commands setup the sub interfaces to allow for two types of encapsulation:  
interface Ethernet 0.1 IPX encapsulation Novell-ether IPX network 9e interface  
Ethernet 0.2 IPX encapsulation sap IPX network 6c.

10. What does the “IPX maximum-paths 2” command accomplish?

- a) It enables load sharing on 2 paths if the paths are equal metric paths
- b) It sets up routing to go to network 2
- c) It is the default for Cisco IPX load sharing
- d) It enables load sharing on 2 paths if the paths are unequal metric paths

Answer: a

Explanation: It enables load sharing on 2 paths if the paths are equal metric paths. The default is 1 path and the maximum is 512 paths. The value must always be greater than 1 and must be a natural number.

11. You want to enable both arpa and snap encapsulation on one router interface. How do you do this?

- a) The interface can handle multiple encapsulation types with no extra configuration
- b) Assign two network numbers, one for each encapsulation type
- c) Enable Novell-ether to run multiple encapsulation types
- d) Both arp and snap are enabled by default so you don't have to configure anything

Answer: b

Explanation: To assign multiple network numbers, you usually use sub interfaces. A sample configuration follows: IPXEthernet 0.1 IPX encapsulation novell-ether ipx network 9e interface ethernet 0.2 ipx encapsulation sap ipx network 6c

12. By default, Cisco routers forward GNS SAPs to remote networks.

- a) False
- b) True

Answer: a

Explanation: GNS is Novell's protocol to Get Nearest Server. If there is a server on the local network, that server will respond. If there isn't, the Cisco router has to be configured to forward the GNS SAP.

13. To prevent Service Advertisements (SAPs) from flooding a network, Cisco routers do not forward them. How are services advertised to other networks?

- a) Each router builds its own SAP table and forwards that every 60 seconds
- b) Each router assigns a service number and broadcasts that
- c) SAPs aren't necessary with Cisco routers
- d) Cisco routers filter out all SAPs

Answer: a

Explanation: Cisco routers build SAP tables and forward the table every 60 seconds. All SAPs can't be filtered even with 4.x since NDS and time synchronization uses SAPs.

14. Novell's implementation of RIP updates routing tables every \_\_\_\_\_ seconds.

- a) 60
- b) 90
- c) 10
- d) 30

Answer: a

Explanation: Novell's RIP updates routing tables every 60 seconds, Apple's RTMP is every 10 seconds, routers ARP every 60 seconds, IGRP signal every 90 seconds, and Banyan VINES signals every 90 seconds.

15. In Novell's use of RIP, there are two metrics used to make routing decisions. Select the correct metrics.

- a) Ticks & Hops
- b) Hops & Loops
- c) Loops & Counts

d) Counts & Ticks

Answer: a

Explanation: It first uses ticks (which is about 1/18 sec.); if there is a tie, it uses hops; if hops are equal, then it uses an administratively assigned tiebreaker.

1. Which protocol should you select if the network diameter is more than 17 hops?

- a) RIPv1
- b) RIPv2
- c) EIGRP
- d) Both RIPv1 and RIPv2

Answer: a

Explanation: RIP v1 has network diameter is more than 17 hops. It uses classful routing and the routing updates are broadcasted over the network. It notifies routers about the update so that they update their own routing tables.

2. How often does a RIPv1 router broadcast its routing table by default?

- a) Every 30 seconds
- b) Every 60 seconds
- c) Every 90 seconds
- d) RIPv1 does not broadcast periodically

Answer: a

Explanation: RIPv1 router broadcasts its routing table every 30 seconds by default. The broadcasted routing table can be used by other routers to find the shortest path among the network devices.

3. Which command displays RIP routing updates?

- a) Show IP route
- b) Debug IP rip
- c) Show protocols
- d) Debug IP route

Answer: b

Explanation: The debug IP rip command is used to show the Internet Protocol (IP) Routing Information Protocol (RIP) updates being sent and received on the router. It verifies that the updates are being broadcasted and not multicasted.

4. Two connected routers are configured with RIP routing. What will be the result when a router receives a routing update that contains a higher-cost path to a network already in its routing table?

- a) The updated information will be added to the existing routing table Debug IP rip
- b) The update will be ignored and no further action will occur Debug IP route
- c) The updated information will replace the existing routing table entry
- d) The existing routing table entry will be deleted from the routing table and all routers will exchange routing updates to reach convergence

Answer: b

Explanation: When a routing update is received by a router, the router first checks the administrative distance (AD) and always chooses the route with the lowest AD. However, if two routes are received and they both have the same AD, then the router will choose the one route with the lowest metrics, or in RIP's case, hop count.

5. You type debug IP rip on your router console and see that 172.16.10.0 is being advertised to you with a metric of 16. What does this mean?

- a) The route is 16 hops away Debug IP rip
- b) The route has a delay of 16 microseconds Debug IP route
- c) The route is inaccessible
- d) The route is queued at 16 messages a second

Answer: c

Explanation: You cannot have 16 hops on a RIP network by default, because the max default hops possible is 15. If you receive a route advertised with a metric of 16, this means it is inaccessible.

6. Default administrative distance of a static route is \_\_\_\_\_

- a) 0
- b) 90
- c) 100
- d) 1

Answer: d

Explanation: 1 is the default administrative distance of Static Route. It is used by routers to select the best path when there are different routes to the same destination. It's used only two different routing protocols are being used.

7. Which protocol gives a full route table update every 30 seconds?

- a) IEGRP
- b) RIP
- c) ICMP
- d) IP

Answer: b

Explanation: RIP gives a full route table update every 30 seconds. The broadcasted routing table can be used by other routers to find the shortest path among the network devices.

8. \_\_\_\_\_ is the default administrative distance of RIP.

- a) 0
- b) 90
- c) 120
- d) 130

Answer: c

Explanation: The default administrative distance is the default count of numbers assigned to

arbitrary routes to a destination. The default administrative distance of RIP is 120. It is used to find the shortest route amongst the number of paths available.

9. Which statement is true regarding classless routing protocol?
  - a) The use of discontinuous networks is not allowed
  - b) Use of variable length subnet masks is permitted
  - c) RIPv1 is a classless routing protocol
  - d) IGRP supports classes routing within the same autonomous system

Answer: b

Explanation: Use of variable length subnet masks is permitted in classless routing protocols. Also use of discontinuous networks is allowed in such routing protocols. RIPv1 is a classful routing protocol but RIPv2 is classless routing protocol.

10. Where should we use default routing?
  - a) On stub networks- which have only one exit path out of the network
  - b) Which have more than one exit path out of the network
  - c) Minimum five exit paths out of the network
  - d) Maximum five exit paths out of the network

Answer: a

Explanation: We must use default routing on stub networks. They have only one exit path out of the network, so there can be no specific path decided for such networks.

1. Which statement is true regarding classless routing protocols?
  - a) The use of discontinuous networks is not allowed
  - b) The use of variable length subnet masks is permitted
  - c) RIPv1 is a classless routing protocol
  - d) RIPv2 supports classless routing

Answer: b

Explanation: Classful routing means that all hosts in the internetwork use the same mask. Classless routing means that you can use Variable Length Subnet Masks (VLSMs) and can also support discontinuous networking.

2. What is route poisoning?
  - a) It sends back the protocol received from a router as a poison pill, which stops the regular updates.  
The use of variable length subnet masks is permitted
  - b) It is information received from a router that can't be sent back to the originating router.RIPv2 supports classless routing
  - c) It prevents regular update messages from reinstating a route that has just come up
  - d) It describes when a router sets the metric for a downed link to infinity

Answer: d

Explanation: When a network goes down, the distance-vector routing protocol initiates route poisoning by advertising the network with a metric of 16, or unreachable.

3. Which of the following is true regarding RIPv2?

- a) It has a lower administrative distance than RIPv1
- b) It converges faster than RIPv1
- c) It has the same timers as RIPv1
- d) It is harder to configure than RIPv1

Answer: c

Explanation: RIPv2 is pretty much just like RIPv1. It has the same administrative distance and timers and is configured just like RIPv1.

4. Which of the situations might not require multiple routing protocols in a network?

- a) When a new Layer 2-only switch is added to the network
- b) When you are migrating from one routing protocol to another
- c) When you are using routers from multiple vendors
- d) When there are host-based routers from multiple vendors

Answer: a

Explanation: Multiple routing protocols are required only when we need to migrate from one routing protocol to another, or when we are using routers from multiple vendors, or when there are host-based routers from multiple vendors. Routing is not a layer-2 function so we don't require multiple routing protocols when new layer-2 switch is added.

5. Which two routing protocols can be redistributed into OSPF by a Cisco router?

- a) IP EIGRP and AppleTalk EIGRP
- b) AppleTalk EIGRP and RIPv2
- c) RIPv2 and IP EIGRP
- d) IPX RIP & AppleTalk EIGRP

Answer: c

Explanation: OSPF stands for Open Shortest Path First. It is a Link state routing protocol. IP EIGRP and RIPv2 can be redistributed into OSPF by a Cisco router.

6. Which is a reason for avoiding doing route redistribution on two routers between the same two routing domains?

- a) Higher cost of two routers
- b) Routing feedback
- c) Cisco IOS incompatibility
- d) Not possible to use two routers

Answer: b

Explanation: Routing feedback is an anomaly in which the routing protocols go back and forth between one route and another. Routing feedback is a reason for avoiding doing route redistribution on two routers between the same two routing domains.

7. What does administrative distance rank?

- a) Metrics
- b) Sources of routing information

- c) Router reliability
- d) Best paths

Answer: b

Explanation: Sources of routing information is the administrative distance rank. It is used by routers to select the best path when there are different routes to the same destination. It's used only two different routing protocols are being used.

8. Which protocol maintains neighbor adjacencies?

- a) RIPv2 and EIGRP
- b) IGRP and EIGRP
- c) RIPv2
- d) EIGRP

Answer: c

Explanation: Neighbor adjacency refers to the formal handshake performed by neighboring routers. It is to be done before the router share any routing information. RIP V2 maintains neighbor adjacencies.

9. Which routing protocol implements the diffusing update algorithm?

- a) IS-IS
- b) IGRP
- c) EIGRP
- d) OSPF

Answer: c

Explanation: The diffusing update algorithm (DUAL) is used to maintain backup routes to a destination for when the primary route fails. EIGRP routing protocol implements the diffusing update algorithm.

10. Which protocol should you select if the network diameter is more than 17 hops?

- a) RIPv1
- b) RIPv2
- c) EIGRP
- d) OSPF

Answer: b

Explanation: RIPv2 protocol should you select if the network diameter is more than 17 hops. It uses classless routing and the routing updates are broadcasted over the network. It notifies routers about the update so that they update their own routing tables.

1. In cryptography, what is cipher?

- a) algorithm for performing encryption and decryption
- b) encrypted message
- c) both algorithm for performing encryption and decryption and encrypted message
- d) decrypted message

Answer: a

Explanation: Cipher is a method to implement encryption and decryption of messages travelling in a network. It's used to increase the confidentiality of the messages.

2. In asymmetric key cryptography, the private key is kept by \_\_\_\_\_

- a) sender
- b) receiver
- c) sender and receiver
- d) all the connected devices to the network

Answer: b

Explanation: The private key is kept only by the receiver of the message. Its aim is to make sure that only the intended receiver can decipher the message.

3. Which one of the following algorithm is not used in asymmetric-key cryptography?

- a) rsa algorithm
- b) diffie-hellman algorithm
- c) electronic code book algorithm
- d) dsa algorithm

Answer: c

Explanation: Electronic code book algorithm is a block cipher method in which each block of text in an encrypted message corresponds to a block of data. It is not feasible for block sizes smaller than 40 bits.

4. In cryptography, the order of the letters in a message is rearranged by \_\_\_\_\_

- a) transpositional ciphers
- b) substitution ciphers
- c) both transpositional ciphers and substitution ciphers
- d) quadratic ciphers

Answer: a

Explanation: In transposition ciphers, the order of letters in a plaintext message is shuffled using a pre-defined method. Some of such ciphers are Rail fence cipher and Columnar transposition.

5. What is data encryption standard (DES)?

- a) block cipher
- b) stream cipher
- c) bit cipher
- d) byte cipher

Answer: a

Explanation: DES is a symmetric key block cipher in which the block size is 64 bits and the key size is 64 bits. It is vulnerable to some attacks and is hence not that popularly used.

6. Cryptanalysis is used \_\_\_\_\_

- a) to find some insecurity in a cryptographic scheme
- b) to increase the speed

- c) to encrypt the data
- d) to make new ciphers

Answer: a

Explanation: Cryptanalysis is a field of study in which a cryptographic scheme is intentionally tried to breach in order to find flaws and insecurities. It is used to make sure that the scheme is least vulnerable to attacks.

7. Which one of the following is a cryptographic protocol used to secure HTTP connection?

- a) stream control transmission protocol (SCTP)
- b) transport layer security (TLS)
- c) explicit congestion notification (ECN)
- d) resource reservation protocol

Answer: b

Explanation: TLS has strong message authentication and key-material generation to prevent eavesdropping, tampering and message forgery. It has been used since the year 1996.

8. Voice privacy in GSM cellular telephone protocol is provided by \_\_\_\_\_

- a) A5/2 cipher
- b) b5/4 cipher
- c) b5/6 cipher
- d) b5/8 cipher

Answer: a

Explanation: The A5/2 cipher was published in the year 1996 and was cryptanalysed in the same year within a month. Its use was discontinued from the year 2006 as it was really weak.

9. ElGamal encryption system is \_\_\_\_\_

- a) symmetric key encryption algorithm
- b) asymmetric key encryption algorithm
- c) not an encryption algorithm
- d) block cipher method

Answer: b

Explanation: The ElGamal encryption system was made by Taher Elgamal in the year 1985 and is an asymmetric key algorithm. It is popularly used in PGP and other systems.

10. Cryptographic hash function takes an arbitrary block of data and returns \_\_\_\_\_

- a) fixed size bit string
- b) variable size bit string
- c) both fixed size bit string and variable size bit string
- d) variable sized byte string

Answer: a

Explanation: Cryptographic hash functions are used in digital signatures and message authentication

codes. The only issue with it is that it returns the same hash value every time for a message making it vulnerable to attackers to evaluate and break the cipher.

1. Multiple objects can be sent over a TCP connection between client and server in a persistent HTTP connection.

- a) True
- b) False

Answer: a

Explanation: Persistent connections are kept active after completing transaction so that multiple objects can be sent over the same TCP connection.

2. HTTP is \_\_\_\_\_ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) data link layer

Answer: a

Explanation: HTTP is an Application layer protocol used to define how messages are formatted and transmitted through the World Wide Web.

3. In the network HTTP resources are located by \_\_\_\_\_

- a) Uniform resource identifier
- b) Unique resource locator
- c) Unique resource identifier
- d) Union resource locator

Answer: a

Explanation: The Uniform Resource Identifier is a name and locator for the resource to be located by the HTTP. The URLs and URNs are derived through the identifier.

4. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.

- a) User datagram protocol
- b) Transmission control protocol
- c) Border gateway protocol
- d) Domain host control protocol

Answer: b

Explanation: HTTP clients perform requests using a TCP connection, because the TCP connection provides a more reliable service. UDP is not a reliable protocol, border gateway protocol is used on top of TCP, while domain host control protocol is a network layer protocol.

5. In HTTP pipelining \_\_\_\_\_

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses
- b) multiple HTTP requests cannot be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection

d) multiple HTTP requests are sent at random on a single TCP connection

Answer: a

Explanation: HTTP pipelining helps the client make multiple requests without having to wait for each response, thus saving a lot of time and bandwidth for the client.

6. FTP server listens for connection on which port number?

- a) 20
- b) 21
- c) 22
- d) 23

Answer: b

Explanation: Port 20 is used for FTP data. Port 22 is used for SSH remote login. Port 23 is used for TELNET.

7. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.

- a) Transmission control protocol
- b) User datagram protocol
- c) Datagram congestion control protocol
- d) Stream control transmission protocol

Answer: a

Explanation: The clients use the Transmission Control Protocol for FTP as it's more reliable than UDP, DCCP, and SCTP, and reliability of file transfer is required to be as high as possible for FTP.

8. In Active mode FTP, the client initiates both the control and data connections.

- a) True
- b) False

Answer: b

Explanation: In Passive mode of FTP, the client initiates both data and control connections, while in Active mode, the client initiates the control connection and then the server initiates the data connection.

9. The File Transfer Protocol is built on \_\_\_\_\_

- a) data centric architecture
- b) service oriented architecture
- c) client server architecture
- d) connection oriented architecture

Answer: c

Explanation: The FTP connection includes a Server and a Client which wish to share files. The server can have multiple clients at the same time while the client communicates with only one server at a time.

10. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_

- a) stream mode
- b) block mode
- c) compressed mode
- d) message mode

Answer: d

Explanation: In Stream mode, the data is transferred in a continuous stream. In Block mode, data is transferred after being divided into smaller blocks. In Compressed mode, data is transferred after being compressed using some compression algorithm.

1. Which methods are commonly used in Server Socket class?

- a) Public Output Stream get Output Stream ()
- b) Public Socket accept ()
- c) Public synchronized void close ()
- d) Public void connect ()

Answer: b

Explanation: The Public socket accept () method is used by the ServerSocket class to accept the connection request of exactly one client at a time. The client requests by initializing the socket object with the servers IP address.

2. Which constructor of Datagram Socket class is used to create a datagram socket and binds it with the given Port Number?

- a) Datagram Socket(int port)
- b) Datagram Socket(int port, Int Address address)
- c) Datagram Socket()
- d) Datagram Socket(int address)

Answer: b

Explanation: Datagram Socket (int port, Int Address address) is used to create a datagram socket. A datagram socket is created for connection-less communication between the server and the client. There is no accept() method in this class.

3. The client in socket programming must know which information?

- a) IP address of Server
- b) Port number
- c) Both IP address of Server & Port number
- d) Only its own IP address

Answer: c

Explanation: The client in socket programming must know IP address of Server as it has to use that IP address in order to initialize the socket class constructor. That is how the client requests a connection to the server.

4. The URL Connection class can be used to read and write data to the specified resource that is referred by the URL.

- a) True
- b) False

Answer: a

Explanation: The URL Connection class can be used to read and write data to the specified resource referred by the URL. A connection to the URL is initialized by the OpenConnection() method of the class.

5. Datagram is basically just a piece of information but there is no guarantee of its content, arrival or arrival time.

- a) True
- b) False

Answer: a

Explanation: Datagram is basically some information travelling between the sender and the receiver, but there is no guarantee of its content, arrival or arrival time. A Datagram socket class object is created to make a datagram connection between the server and the client.

6. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_

- a) Socket
- b) IP Address
- c) Protocol
- d) MAC Address

Answer: c

Explanation: TCP, FTP, Telnet, SMTP, POP etc. are examples of Protocol. Out of them, TCP is a transport layer protocol and FTP, TELNET, SMTP and POP are application layer protocols.

7. What does the java.net.InetAddress class represent?

- a) Socket
- b) IP Address
- c) Protocol
- d) MAC Address

Answer: b

Explanation: The java.net.InetAddress class represents IP Address of a particular specified host. It can be used to resolve the host name from the IP address or the IP address from the host name.

8. The flush () method of Print Stream class flushes any un-cleared buffers in the memory.

- a) True
- b) False

Answer: a

Explanation: The flush () method of Print Stream class flushes any un cleared buffers in memory.

9. Which classes are used for connection-less socket programming?

- a) Datagram Socket

- b) Datagram Packet
- c) Both Datagram Socket & Datagram Packet
- d) Server Socket

Answer: c

Explanation: Datagram is basically some information travelling between the sender and the receiver, but there is no guarantee of its content, arrival or arrival time. Datagram Socket, Datagram Packet are used for connection-less socket programming, while Server Socket is used for connection-oriented socket programming.

10. In Inet Address class, which method returns the host name of the IP Address?

- a) Public String get Hostname()
- b) Public String getHostAddress()
- c) Public static InetAddress get Localhost()
- d) Public getByName()

Answer: a

Explanation: In Inet Address class public String getHostname() method returns the host name of the IP Address. The getHostAddress() method returns the IP address of the given host name.

1. Cookies were originally designed for \_\_\_\_\_

- a) Client side programming
- b) Server side programming
- c) Both Client side programming and Server side programming
- d) Socket programming

Answer: b

Explanation: Cookies were originally designed for server side programming, and at the lowest level, they are implemented as an extension to the HTTP protocol. They were introduced with the intention of providing a better user experience for the websites.

2. The Cookie manipulation is done using which property?

- a) cookie
- b) cookies
- c) manipulate
- d) manipulate cookie

Answer: a

Explanation: The cookie property sets or returns all name/value pairs of cookies in the current document. There are no methods involved: cookies are queried, set, and deleted by reading and writing the cookie property of the Document object using specially formatted strings.

3. Which of the following explains Cookies nature?

- a) Non Volatile
- b) Volatile
- c) Intransient

d) Transient

Answer: d

Explanation: Cookies are transient by default; the values they store last for the duration of the web browser session but are lost when the user exits the browser. While the browsing session is active the cookie stores the user values in the user's storage itself and accesses them.

4. Which attribute is used to extend the lifetime of a cookie?

- a) Higher-age
- b) Increase-age
- c) Max-age
- d) Lifetime

Answer: c

Explanation: If you want a cookie to last beyond a single browsing session, you must tell the browser how long (in seconds) you would like it to retain the cookie by specifying a max-age attribute. A number of seconds until the cookie expires. A zero or negative number will kill the cookie immediately.

5. Which of the following defines the Cookie visibility?

- a) Document Path
- b) LocalStorage
- c) SessionStorage
- d) All of the mentioned

Answer: d

Explanation: sessionStorage, localStorage and Document path all are used to store data on the client-side. Each one has its own storage and expiration limit. Cookie visibility is scoped by the document origin as Local Storage and Session Storage are, and also by document path.

6. Which of the following can be used to configure the scope of the Cookie visibility?

- a) Path
- b) Domain
- c) Both Path and Domain
- d) Server

Answer: d

Explanation: The Cookie visibility scope is configurable through cookie attributes path and domain. Domain attribute in the cookie is used to specify the domain for which the cookie is sent. Path includes the Path attribute in the cookie to specify the path for which this cookie is sent.

7. How can you set a Cookie visibility scope to local Storage?

- a) /
- b) %
- c) \*
- d) #

Answer: a

Explanation: Setting the path of a cookie to "/" gives scoping like that of localStorage and also specifies that the browser must transmit the cookie name and value to the server whenever it requests any web page on the site.

8. Which of the following is a Boolean cookie attribute?

- a) Bool
- b) Secure
- c) Lookup
- d) Domain

Answer: b

Explanation: The final cookie attribute is a boolean attribute named secure that specifies how cookie values are transmitted over the network. By default, cookies are insecure, which means that they are transmitted over a normal, insecure HTTP connection. If a cookie is marked secure, however, it is transmitted only when the browser and server are connected via HTTPS or another secure protocol.

9. Which of the following function is used as a consequence of not including semicolons, Commas or whitespace in the Cookie value?

- a) encodeURIComponent()
- b) encodeURI()
- c) encodeComponent()
- d) encode()

Answer: a

Explanation: Cookie values cannot include semicolons, commas, or whitespace. For this reason, you may want to use the core JavaScript global function encodeURIComponent() to encode the value before storing it in the cookie.

10. What is the constraint on the data per cookie?

- a) 2 KB
- b) 1 KB
- c) 4 KB
- d) 3 KB

Answer: c

Explanation: Each cookie can hold up to only 4 KB. In practice, browsers allow many more than 300 cookies total, but the 4 KB size limit may still be enforced by some. Storage of a session has to be a minimum of 5MB.

1. What does REST stand for?

- a) Represent State Transfer
- b) Representational State Transfer
- c) Representing State Transfer
- d) Representation State Transfer

Answer: b

Explanation: REST stands for Representational State Transfer and is a software architecture style in which the server sends a representation of the state of the resource that it requests. It provides interoperability between the systems.

2. Which of the following protocol is used by Restful web services as a medium of communication between client and server?

- a) HTTP
- b) FTP
- c) Gopher
- d) TELNET

Answer: a

Explanation: Restful web services make use of HTTP protocol as a medium of communication between client and server. The REST architecture was known as the HTTP object model back in the year 1994.

3. Which of the following is not a good practice to create a standard URI for a web service?

- a) Maintain Backward Compatibility
- b) Use HTTP Verb
- c) Using spaces for long resource names
- d) Use lowercase letters

Answer: c

Explanation: We must use hyphens (-) or underscores (\_) instead of spaces to represent long resource names. It may lead to the resource to be less recognizable for the system if we use spaces instead.

4. Which of the following HTTP methods should be idempotent in nature?

- a) OPTIONS
- b) DELETE
- c) POST
- d) HEAD

Answer: b

Explanation: DELETE operation should be idempotent, means their result will always same no matter how many times these operations are invoked. Also, the PUT operation is supposed to be idempotent.

5. Which of the following directive of Cache Control Header of HTTP response indicates that resource is cachable by only client and server?

- a) Public
- b) Private
- c) Nocache/nostore
- d) Maxage

Answer: b

Explanation: Private directive indicates that resource is cachable by only client and server; no intermediary can cache the resource. But if we use the public directive, it indicates that the resource may be cachable by any intermediary component.

6. Which of the following HTTP Status code means CREATED, when a resource is successfully created using POST or PUT request?

- a) 200
- b) 201
- c) 204
- d) 304

Answer: b

Explanation: HTTP Status Code 201 means CREATED, when a resource is successfully created using POST or PUT request. The code 200 means success i.e. OK, code 204 means NO CONTENT, and the code 304 means NOT MODIFIED.

7. Which of the following annotation of JAX RS API is used to annotate a method used to create resource?

- a) @Path
- b) @GET
- c) @PUT
- d) @POST

Answer: C

Explanation: @PUT is the HTTP request that is used to create resource and also defines a complete resource path. @POST may also be used to create a resource but it won't define a resource path i.e. an accessing medium.

8. Which of the following annotation of JAX RS API binds the parameter passed to method to a HTTP matrix parameter in path?

- a) @PathParam
- b) @QueryParam
- c) @MatrixParam
- d) @HeaderParam

Answer: c

Explanation: @MatrixParam is the annotation that binds the parameter passed to method to a HTTP matrix parameter in path, while @QueryParam binds to a query parameter, @PathParam binds to a value and @HeaderParam binds to the HTTP header in the path.

9. In REST architecture, a REST Server simply provides access to resources and REST client accesses and presents the resources.

- a) False
- b) True

Answer: b

Explanation: In REST architecture, a REST Server simply provides access to resources and REST client accesses and presents the resources. It is popularly used because it makes efficient use of the bandwidth and can be cached for better performance and scalability.

10. POST operation should be idempotent.

- a) True
- b) False

Answer: b

Explanation: POST operation can cause different result so they are not idempotent. The DELETE and PUT operations are idempotent as they invoke the same result every time they are called.

1. The term that is used to place packet in its route to its destination is called \_\_\_\_\_

- a) Delayed
- b) Urgent
- c) Forwarding
- d) Delivering

Answer: c

Explanation: Forwarding is done by the nodes in the path from source to destination, that are not the intended destination for the packet in order to pass the packet to the next node in the path. The destination machine does not forward the packet to any other node.

2. A second technique to reduce routing table and simplify searching process is called \_\_\_\_\_

- a) Network-Specific Method
- b) Network-Specific Motion
- c) Network-Specific Maintaining
- d) Network-Specific Membership

Answer: a

Explanation: In the network specific forwarding method, there is only one record, the destination of the packet, in the routing table and not the other hosts of the network. The other two forwarding methods are the default method and the next-hop method.

3. Next-Hop Method is used to reduce contents of a \_\_\_\_\_

- a) Revolving table
- b) Rotating Table
- c) Routing Table
- d) Re-allocate table

Answer: c

Explanation: In the next-hop forwarding method, the routing table of each router in the path contains the address of only the next hop in the path of packet. This method is suitable for short distances only.

4. Several techniques can make size of routing table manageable and also handle issues such as \_\_\_\_\_

- a) Maturity
- b) Error reporting
- c) Tunneling
- d) Security

Answer: d

Explanation: The size of the routing table in the technique must be manageable for the network nodes i.e. it must not be too big. Security of the forwarding packet is the highest priority for a technique and must be high enough so that only authorized senders and receivers can access the packet's content.

5. Host-specific routing is used for purposes such as checking route or providing \_\_\_\_\_

- a) Network Measures
- b) Security Measures
- c) Routing Measures
- d) Delivery Measures

Answer: b

Explanation: In host-specific routing, the route of the packet is defined based on the exact match of the packet's IP with the routing table entry of the host. It provides the best security for the packet as the packet is forwarded only to routers in the pre-defined path.

6. In Unicast routing, if instability is between three nodes, stability cannot be \_\_\_\_\_

- a) Stable
- b) Reversed
- c) Guaranteed
- d) Forward

Answer: c

Explanation: In Unicast routing, there is only sender and one receiver. So, if there is instability between three nodes, in which one is sender, one is receiver and one is the router in the path, there is no other path available for the packet and the stability of the network is not guaranteed.

7. In Unicast Routing, Dijkstra algorithm creates a shortest path tree from a \_\_\_\_\_

- a) Graph
- b) Tree
- c) Network
- d) Link

Answer: a

Explanation: The Djikstra's shortest path algorithm is the fastest among the algorithms for finding the shortest path in a graph. But it is a greedy method based algorithm so it does not guarantee the shortest path every time.

8. In Multicast Routing Protocol, flooding is used to broadcast packets but it creates \_\_\_\_\_

- a) Gaps
- b) Loops

- c) Holes
- d) Links

Answer: b

Explanation: In multicast routing, there is one sender and many receivers. So flooding is the most basic method to forward packets to many receivers. The one issue with flooding is that it creates routing loops. One loop prevention method is that the routers will not send the packet to a node where the packet has been received before.

9. RPF stands for \_\_\_\_\_

- a) Reverse Path Forwarding
- b) Reverse Path Failure
- c) Reverse Packet Forwarding
- d) Reverse Protocol Failure

Answer: a

Explanation: Reverse Path Forwarding is a loop-free forwarding method for multi-cast routing in modern systems. The method focuses on forwarding the packet away from the source IP in each iteration to make sure there is no loops.

10. LSP stands for \_\_\_\_\_

- a) Link Stable Packet
- b) Link State Packet
- c) Link State Protocol
- d) Link State Path

Answer: b

Explanation: A Link State Packet is a packet created by a router that lists its neighboring nodes and routers in link state routing protocol. It is shared with other routers to find the shortest path from a source to the destination.

1. IPSec is designed to provide security at the \_\_\_\_\_

- a) transport layer
- b) network layer
- c) application layer
- d) session layer

Answer: b

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

2. In tunnel mode, IPSec protects the \_\_\_\_\_

- a) Entire IP packet
- b) IP header
- c) IP payload

d) IP trailer

Answer: a

Explanation: In the tunnel mode, IPSec adds control bits into the packets to encrypt the entire packet between the IPSec endpoints. Using encryption, it provides secure communication between the two endpoints.

3. Network layer firewall works as a \_\_\_\_\_

- a) frame filter
- b) packet filter
- c) signal filter
- d) content filter

Answer: b

Explanation: As you know, firewalls are available as hardware appliances, as software-only, or a combination of the two. In every case, the purpose of a firewall is to isolate your trusted internal network (or your personal PC) from the dangers of unknown resources on the Internet and other network connections that may be harmful. The firewall prevents unauthorized access to your internal, trusted network from outside threats.

4. Network layer firewall has two sub-categories called \_\_\_\_\_

- a) stateful firewall and stateless firewall
- b) bit oriented firewall and byte oriented firewall
- c) frame firewall and packet firewall
- d) network firewall and data firewall

Answer: a

Explanation: Most network layer firewalls can operate as stateful or stateless firewalls, creating two subcategories of the standard network layer firewall. Stateful firewalls have the advantage of being able to track packets over a period of time for greater analysis and accuracy — but they require more memory and operate more slowly. Stateless firewalls do not analyze past traffic and can be useful for systems where speed is more important than security, or for systems that have very specific and limited needs. For example, a computer that only needs to connect to a particular backup server does not need the extra security of a stateful firewall.

5. WPA2 is used for security in \_\_\_\_\_

- a) ethernet
- b) bluetooth
- c) wi-fi
- d) e-mail

Answer: c

Explanation: WPA2 or WiFi Protected Access 2 is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

6. An attempt to make a computer resource unavailable to its intended users is called \_\_\_\_\_
- a) denial-of-service attack
  - b) virus attack
  - c) worms attack
  - d) botnet process

Answer: a

Explanation: In a Denial of Service attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. The methods that the attacker can use are vulnerability attack, bandwidth flooding and connection flooding.

7. Extensible authentication protocol is authentication framework frequently used in \_\_\_\_\_
- a) wired personal area network
  - b) wireless networks
  - c) wired local area network
  - d) wired metropolitan area network

Answer: b

Explanation: The Extensible Authentication Protocol (EAP) is an authentication protocol used to connect a network node to the Internet. It designed through extending the methods used by the Point-to-Point Protocol for authentication.

8. Pretty good privacy (PGP) is used in \_\_\_\_\_
- a) browser security
  - b) email security
  - c) FTP security
  - d) wifi security

Answer: b

Explanation: PGP is an encryption method used in e-mail security to encrypt and decrypt the content of an e-mail transmitted over the internet. It makes sure that the message cannot be stolen by other unauthorized users.

9. PGP encrypts data by using a block cipher called \_\_\_\_\_
- a) international data encryption algorithm
  - b) private data encryption algorithm
  - c) internet data encryption algorithm
  - d) local data encryption algorithm

Answer: a

Explanation: The IDEA was designed in 1991 by Xuejia Lai and James Massey. Before IDEA, PGP used the cipher method BassOmatic.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called \_\_\_\_\_
- a) DNS lookup

- b) DNS hijacking
- c) DNS spoofing
- d) DNS authorizing

Answer: c

Explanation: In DNS spoofing, also known as DNS cache poisoning, an attacker gets the valid credentials from a victim by spoofing the intended resource, and tricking the victim to give his/her valid authorization credentials.

1. Open Shortest Path First (OSPF) is also called as \_\_\_\_\_
- a) Link state protocol
  - b) Error-correction protocol
  - c) Routing information protocol
  - d) Border gateway protocol

Answer: a

Explanation: In OSPF, the link state of each path is checked, and then the shortest path is chosen among only the open state links. Each OSPF router monitors the cost of the link to each of its neighbors and then floods the link state information to other routers in the network.

2. The computation of the shortest path in OSPF is usually done by \_\_\_\_\_
- a) Bellman-ford algorithm
  - b) Routing information protocol
  - c) Dijkstra's algorithm
  - d) Distance vector routing

Answer: c

Explanation: Shortest path in OSPF is usually computed by Dijkstra's algorithm. It was proposed by Edsger W. Dijkstra in the year 1956. It is a greedy method algorithm and hence may not guarantee the shortest path every time, but is really fast.

3. Which of the following is false with respect to the features of OSPF?
- a) Support for fixed-length subnetting by including the subnet mask in the routing message
  - b) More flexible link cost than can range from 1 to 65535
  - c) Use of designated router
  - d) Distribution of traffic over multiple paths that have equal cost to the destination

Answer: a

Explanation: OSPF provides support for variable-length subnetting by including the subnet mask in the routing message. For fixed length subnets, there is no requirement for including the subnet mask in the routing message as there is just one subnet mask for all the subnets.

4. In OSPF, which protocol is used to discover neighbour routers automatically?
- a) Link state protocol
  - b) Error-correction protocol
  - c) Routing information protocol

d) Hello protocol

Answer: d

Explanation: Hello protocol is used to discover neighboring routers automatically. It makes sure that the communication between neighbors is bidirectional. It's similar to the real world moral construct of saying "Hello" to initialize the communication.

5. Which of the following is not a type of OSPF packet?

- a) Hello
- b) Link-state request
- c) Link-state response
- d) Link-state ACK

Answer: c

Explanation: The five types of OSPF packets are: Hello, Database description, Link-state request, Link-state update, and Link-state ACK. There is no Link-state response packet; the neighbor router sends a Link-state update packet as a response to the Link-state request packet if there is an update in the routing table.

6. What is the correct order of the operations of OSPF?

- i – Hello packets
  - ii – Propagation of link-state information and building of routing tables
  - iii – Establishing adjacencies and synchronization of database
- a) i-ii-iii
  - b) i-iii-ii
  - c) iii-ii-i
  - d) ii-i-iii

Answer: b

Explanation: OSPF first implements a hello protocol. Then it later on tries to establish synchronisation with database. Later on building of routing tables is done.

7. In OSPF header, which field is used to detect errors in the packet?

- a) Type
- b) Area ID
- c) Authentication type
- d) Checksum

Answer: d

Explanation: Checksum field is used to detect errors. It makes sure that the data portions that are being sent are all in integrity. It can detect duplicated bits. Once an error is detected, the sender has to re-transmit the data as it won't receive an acknowledgement.

8. In OSPF database descriptor packet, if there are more database descriptor packets in the flow, 'M' field is set to \_\_\_\_\_

- a) 1
- b) 0

- c) more
- d) -1

Answer: a

Explanation: The “M” bit is the more bit, which indicates that there are more packets to be received in the descriptor packet flow whenever it is set to 1. There is also an “I” bit which indicates if the packet is first in the flow.

9. In OSPF database descriptor packet, which field is used to indicate that the router is master?

- a) M
- b) MS
- c) I
- d) Options

Answer: b

Explanation: The MS bit is used to indicate if the origin of the packet is a master or a slave. If it is set to 1, the source of the packet is a master, and if it is set to 0, the source of the packet is a slave.

10. In OSPF database descriptor packet, which field is used to detect a missing packet?

- a) LSA header
- b) MS
- c) Database descriptor sequence number
- d) Options

Answer: c

Explanation: Sequence number field is used to detect a missing packet. The packets are to be received in order of the sequence number, so if the receiver detects that there is a sequence number skipped or missing in the order, it stops processing the further received packets and informs the sender to retransmit the packets in sequence.

1. An OSPF router receives an LSA, the router checks its sequence number, and this number matches the sequence number of the LSA that the receiving router already has. What does the receiving router do with the LSA?

- a) Ignores the LSA
- b) Adds it to the database
- c) Sends newer LSU update to source router
- d) Floods the LSA to the other routers

Answer: a

Explanation: When the OSPF router receives an LSA, the router checks its sequence number. If this number matches the sequence number of the LSA that the receiving router already has, the router ignores the LSA.

2. An OSPF router receives an LSA. The router checks its sequence number and finds that this number is higher than the sequence number it already has. Which two tasks does the router perform with the LSA?

- a) Ignores the LSA

- b) Adds it to the database
- c) Sends newer LSU update to source router
- d) Floods the LSA to the other routers

Answer: b

Explanation: An OSPF router receives an LSA. If the router checks its sequence number and finds that the number is higher than the sequence number of the LSA that it already has, the router adds it to the database, and then floods the LSA to the other routers.

3. An OSPF router receives an LSA. The router checks its sequence number and finds that this number is lower than the sequence number it already has. What does the router do with the LSA?
- a) ignores the LSA
  - b) adds it to the database
  - c) sends newer LSU update to source router
  - d) floods the LSA to the other routers

Answer: c

Explanation: An OSPF router receives an LSA. If the router checks its sequence number and finds that this number is lower than the sequence number that it already has, the router sends newer LSU update to source router. The router then adds it to the database and floods it to the other routers.

4. Each LSA has its own age timer. By default, how long does an LSA wait before requiring an update?
- a) 30 seconds
  - b) 1 minute
  - c) 30 minutes
  - d) 1 hour

Answer: c

Explanation: Each LSA has its own age timer. By default, an LSA waits for 30 minutes before requiring an update. The router then has to send a LSR (Link State Request) to its neighbors to get an update.

5. Distance vector protocols use the concept of split horizon, but link-state routing protocols, such as OSPF, do not.
- a) True
  - b) False

Answer: b

Explanation: In Distance vector routing protocols, there is a problem called count-to-infinity which occurs regularly. So, to make sure that it does not occur, the split horizon algorithm is used. There is no requirement for it in OSPF.

6. The outcome of Dijkstra's calculation is used to populate the \_\_\_\_\_
- a) Topology table
  - b) Routing table
  - c) Neighbor table

d) Adjacency table

Answer: b

Explanation: The outcome of Djikstra's calculation is the main source of entries in the routing table as it is the algorithm that is used to find the shortest path in OSPF. The calculations are done after receiving every new LSU.

7. What is the IP protocol number for OSPF packets?

- a) 89
- b) 86
- c) 20
- d) 76

Answer: a

Explanation: 89 is the IP protocol number for OSPF packets. 86 is the protocol number for DGP, 76 is the protocol number for Backroom-SATNET-Monitoring and 20 is the protocol number for Host Monitoring Protocol.

8. Which packet is NOT an OSPF packet type?

- a) LSU
- b) LSR
- c) DBD
- d) Query

Answer: d

Explanation: LSU is the Link State Update packet, LSR is the Link State Request packet and DBD is the Database Descriptor packet in OSPF. Query packet is NOT an OSPF packet type.

9. Which multicast address does the OSPF Hello protocol use?

- a) 224.0.0.5
- b) 224.0.0.6
- c) 224.0.0.7
- d) 224.0.0.8

Answer: a

Explanation: Hello protocol is used to discover neighboring routers automatically. It makes sure that the communication between neighbors is bidirectional. The multicast address that the OSPF Hello protocol uses is 224.0.0.5.

10. The Hello protocol sends periodic updates to ensure that a neighbor relationship is maintained between adjacent routers.

- a) True
- b) False

Answer: a

Explanation: The Hello protocol sends periodic updates to ensure that a neighbor relationship is

maintained between adjacent routers. It's similar to the real world moral construct of saying "Hello" to initialize the communication.

11. DBD packets are involved during which two states?

- a) Exstart and exchange
- b) Loading and Two-way
- c) Init and Full
- d) Down and Loading

Answer: a

Explanation: DBD stands for Database Descriptor. DBD packets are involved during the two states Exstart and Exchange. In exstart, the master and the slaves are decided and in the exchange state, the DBD is exchanged among the neighbors.

12. At which interval does OSPF refresh LSAs?

- a) 10 seconds
- b) 30 seconds
- c) 30 minutes
- d) 1 hour

Answer: d

Explanation: Each LSA has its own age timer. By default, an LSA waits for 30 minutes before requiring an update. So to make sure that each router first has an up-to-date LSA, OSPF refreshes LSAs after every 1 hour.

13. Which field is NOT a field within an OSPF packet header?

- a) Packet length
- b) Router ID
- c) Authentication type
- d) Maxage time

Answer: d

Explanation: The packet length field gives the length of the packet in bits. The Authentication type field gives the type of authentication used. The router ID field gives the ID of the source router of the packet. In an OSPF packet header, there is no field called Maxage time.

14. Which two commands are required for basic OSPF configuration?

- a) "[Network mask] area [area-id]" and "Router ospf [process-id]"
- b) "[Wildcard-mask] area [area-id]" and "[Network mask] area [area-id]"
- c) Only "Router ospf [process-id]"
- d) "[Wildcard-mask] area [area-id]" and "Router ospf [process-id]"

Answer: d

Explanation: The "Router ospf [process-id]" command enables OSPF routing protocol in the router and the "[Wildcard-mask] area [area-id]" command is used to select the interfaces that we want to include in the OSPF process. That is enough for the basic configuration of OSPF in a router.

15. Which OSPF show command describes a list of OSPF adjacencies?

- a) Show ip ospf interface
- b) Show ip ospf
- c) Show ip route
- d) Show ip ospf neighbor

Answer: d

Explanation: The “Show ip ospf neighbor” command is the OSPF show command that can describe a list of OSPF adjacencies i.e. the list of adjacent nodes or neighbors. The router will only communicate with its neighbors directly.

1. Datagram switching is done at which layer of OSI model?

- a) Network layer
- b) Physical layer
- c) Application layer
- d) Transport layer

Answer: a

Explanation: Datagram switching is normally done at network layer. In datagram switching, the datagram stream need not be in order as each datagram can take different routes to the destination.

2. Packets in datagram switching are referred to as \_\_\_\_\_

- a) Switches
- b) Segments
- c) Datagrams
- d) Data-packets

Answer: c

Explanation: As the name suggests, in datagram switching packets are called as datagram. Each datagram/packet is treated as an individual entity and routed independently through the network.

3. Datagram networks mainly refers to \_\_\_\_\_

- a) Connection oriented networks
- b) Connection less networks
- c) Telephone networks
- d) Internetwork

Answer: b

Explanation: The switch does not keep the information about the connection state, hence it is connection less. There is no need for establishing a handshake to begin the transmission in such networks.

4. Datagrams are routed to their destinations with the help of \_\_\_\_\_

- a) Switch table
- b) Segments table
- c) Datagram table

d) Routing table

Answer: c

Explanation: Routing table is used to route the packets to their destinations. The packet/datagram header contains the destination header for the whole journey to source to the destination through the routers.

5. The main contents of the routing table in datagram networks are \_\_\_\_\_

- a) Source and Destination address
- b) Destination address and Output port
- c) Source address and Output port
- d) Input port and Output port

Answer: b

Explanation: Routing table contains destination address and output port to route the packets to their destinations. The port address specifies the particular application that the packet has to be forwarded to after it has reached the destination.

6. Which of the following remains same in the header of the packet in a datagram network during the entire journey of the packet?

- a) Destination address
- b) Source address
- c) Checksum
- d) Padding

Answer: a

Explanation: Destination address remains same in the header during the entire journey of the packet. There is no pre-decided route for the packets so each datagram/packet is treated as an individual entity and routed independently through the network.

7. Which of the following is true with respect to the delay in datagram networks?

- a) Delay is greater than in a virtual circuit network
- b) Each packet may experience a wait at a switch
- c) Delay is not uniform for the packets of a message
- d) All of the mentioned

Answer: d

Explanation: The delay of each packet in a datagram network is different as each packet might take a different route to the destination. The delay includes the propagation delay and the processing delay that is induced at each stop/switch that the packet encounters in its journey.

8. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.

- a) Stack
- b) Queue
- c) Hash

d) Routing table

Answer: b

Explanation: When there are too many packets to be transmitted and the transmission line gets blocked while transmitting some packets, the remaining packets are stored in queue during delay and are served as first in first out. The delay is called as queuing delay.

9. The probability of the error in a transmitted block \_\_\_\_\_ with the length of the block

- a) Remains same
- b) Decreases
- c) Increases
- d) Is not proportional

Answer: c

Explanation: Probability of the error in a transmitted block increases with the length of the block. Hence, the blocks should be as short as possible for ideal transmission with low possibility of an error.

10. Which of the following is false with respect to the datagram networks?

- a) Number of flows of packets are not limited
- b) Packets may not be in order at the destination
- c) Path is not reserved
- d) Delay is the same for all packets in a flow

Answer: d

Explanation: The delay of each packet in a datagram network is different as each packet might take a different route to the destination. This happens because there is no pre-decided route for the packets.

1. Network layer firewall works as a \_\_\_\_\_

- a) Frame filter
- b) Packet filter
- c) Content filter
- d) Virus filter

Answer: b

Explanation: As you know, firewalls are available as hardware appliances, as software-only, or a combination of the two. In every case, the purpose of a firewall is to isolate your trusted internal network (or your personal PC) from the dangers of unknown resources on the Internet and other network connections that may be harmful. The firewall prevents unauthorized access to your internal, trusted network from outside threats.

2. Network layer firewall has two sub-categories as \_\_\_\_\_

- a) State full firewall and stateless firewall
- b) Bit oriented firewall and byte oriented firewall
- c) Frame firewall and packet firewall

d) Network layer firewall and session layer firewall

Answer: a

Explanation: Most network layer firewalls can operate as stateful or stateless firewalls, creating two subcategories of the standard network layer firewall. Stateful firewalls have the advantage of being able to track packets over a period of time for greater analysis and accuracy — but they require more memory and operate more slowly. Stateless firewalls do not analyze past traffic and can be useful for systems where speed is more important than security, or for systems that have very specific and limited needs. For example, a computer that only needs to connect to a particular backup server does not need the extra security of a stateful firewall.

3. A firewall is installed at the point where the secure internal network and untrusted external network meet which is also known as \_\_\_\_\_

- a) Choke point
- b) Meeting point
- c) Firewall point
- d) Secure point

Answer: a

Explanation: A firewall can be a PC, a router, a midrange, a mainframe, a UNIX workstation, or a combination of these that determines which information or services can be accessed from the outside and who is permitted to use the information and services from outside. Generally, a firewall is installed at the point where the secure internal network and untrusted external network meet, which is also known as a chokepoint.

4. Which of the following is / are the types of firewall?

- a) Packet Filtering Firewall
- b) Dual Homed Gateway Firewall
- c) Screen Host Firewall
- d) Dual Host Firewall

Answer: a

Explanation: A firewall can be a PC, a midrange, a mainframe, a UNIX workstation, a router, or combination of these. Depending on the requirements, a firewall can consist of one or more of the following functional components: Packet-filtering router

5. A proxy firewall filters at \_\_\_\_\_

- a) Physical layer
- b) Data link layer
- c) Network layer
- d) Application layer

Answer: d

Explanation: The application firewall is typically built to control all network traffic on any layer up to the application layer. It is able to control applications or services specifically, unlike a stateful network firewall, which is – without additional software – unable to control network traffic

regarding a specific application. There are two primary categories of application firewalls, network-based application firewalls and host-based application firewalls.

6. A packet filter firewall filters at \_\_\_\_\_

- a) Physical layer
- b) Data link layer
- c) Network layer or Transport layer
- d) Application layer

Answer: c

Explanation: In computing, a firewall is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules.[1] A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet, that is assumed not to be secure or trusted.[2] Firewalls are often categorized as either network firewalls or host-based firewalls.

7. What is one advantage of setting up a DMZ with two firewalls?

- a) You can control where traffic goes in three networks
- b) You can do stateful packet filtering
- c) You can do load balancing
- d) Improved network performance

Answer: c

Explanation: DMZ stands for De-Militarized Zone. In a topology with a single firewall serving both internal and external users (LAN and WAN), it acts as a shared resource for these two zones. So load balancing can be done by adding another firewall.

8. What tells a firewall how to reassemble a data stream that has been divided into packets?

- a) The source routing feature
- b) The number in the header's identification field
- c) The destination IP address
- d) The header checksum field in the packet header

Answer: a

Explanation: The source routing feature provides a path address for the packet to help the firewall to reassemble the data stream that was divided into packets. After reassembling, the firewall can then filter the stream.

9. A stateful firewall maintains a \_\_\_\_\_ which is a list of active connections.

- a) Routing table
- b) Bridging table
- c) State table
- d) Connection table

Answer: a

Explanation: The routing table basically gives the state of each connection i.e. whether the connection is active or not. A routing table ensures the best performance for the stateful firewall.

10. A firewall needs to be \_\_\_\_\_ so that it can grow proportionally with the network that it protects.

- a) Robust
- b) Expansive
- c) Fast
- d) Scalable

Answer: b

Explanation: The firewall has to be expansive because a network is expected to grow with time and if the firewall is unable to grow with it, the firewall won't be able to handle the growing network traffic flow and will hence fail.

1. Complex networks today are made up of hundreds and sometimes thousands of \_\_\_\_\_

- a) Documents
- b) Components
- c) Servers
- d) Entities

Answer: b

Explanation: Complex networks today are made up of hundreds and sometimes thousands of components. For effective functioning of these thousands of components, good network management is essential.

2. Performance management is closely related to \_\_\_\_\_

- a) Proactive Fault Management
- b) Fault management
- c) Reactive Fault Management
- d) Preventive Fault Management

Answer: b

Explanation: Fault management is really closely related to performance management. It is important to ensure that the network handles faults as effectively as it handles its normal functioning to achieve better performance management.

3. Configuration management can be divided into two subsystems: reconfiguration and \_\_\_\_\_

- a) Documentation
- b) Information
- c) Servers
- d) Entity

Answer: a

Explanation: The documentation subsystem of configuration management handles the log making and reporting functions of the configuration management. It also reports the errors in the network caused by the configuration's failure.

4. In Network Management System, the term that is responsible for controlling access to network based on predefined policy is called \_\_\_\_\_

- a) Fault Management
- b) Secured Management
- c) Active Management
- d) Security Management

Answer: d

Explanation: In Network Management System, the term that is responsible for controlling access to the network based on predefined policy is called security management. The security management ensures authentication, confidentiality and integrity in the network.

5. Control of users' access to network resources through charges is the main responsibility of

- 
- a) Reactive Fault Management
  - b) Reconfigured Fault Management
  - c) Accounting Management
  - d) Security Management

Answer: c

Explanation: Control of users' access to network resources through charges is the main responsibility of accounting management. The accounting management creates a log of the users activity on the network too and goes hand-in-hand with the configurations management.

6. The physical connection between an end point and a switch or between two switches is

- 
- a) Transmission path
  - b) Virtual path
  - c) Virtual circuit
  - d) Transmission circuit

Answer: a

Explanation: The physical connection between an end point and a switch or between two switches is transmission path. The transmission path is the physical roadway that the packet needs to propagate in order to travel through the network.

7. Which of the following networks supports pipelining effect?

- a) Circuit-switched networks
- b) Message-switched networks
- c) Packet-switched networks
- d) Stream-switched networks

Answer: c

Explanation: Packet switched network is most preferred for pipelining process. Pipelining exponentially reduces the time taken to transmit a large number of packets in the network.

8. In Network Management System, maps track each piece of hardware and its connection to the

- 
- a) IP Server

- b) Domain
- c) Network
- d) Data

Answer: c

Explanation: Network is the main entity connecting different components in a place. A network map is made to track each component and its connection to the network to ensure better network management.

9. MIB is a collection of groups of objects that can be managed by \_\_\_\_\_

- a) SMTP
- b) UDP
- c) SNMP
- d) TCP/IP

Answer: c

Explanation: MIB stands for Management Information Base. Simple network management controls the group of objects in management information base. It is usually used with SNMP (Simple Network Management Protocol).

10. A network management system can be divided into \_\_\_\_\_

- a) three categories
- b) five broad categories
- c) seven broad categories
- d) ten broad categories

Answer: b

Explanation: The five broad categories of network management are

- Fault Management
- Configuration Management
- Accounting (Administration)
- Performance Management
- Security Management.

1. Ping can \_\_\_\_\_

- a) Measure round-trip time
- b) Report packet loss
- c) Report latency
- d) All of the mentioned

Answer: d

Explanation: PING (Packet Internet Groper) command is the best way to test connectivity between two nodes, whether it is Local Area Network (LAN) or Wide Area Network (WAN). Ping uses ICMP (Internet Control Message Protocol) to communicate to other devices.

2. Ping sweep is a part of \_\_\_\_\_

- a) Traceroute

- b) Nmap
- c) Route
- d) Ipconfig

Answer: b

Explanation: A ping sweep is a method that can establish a range of IP addresses which map to live hosts and are mostly used by network scanning tools like nmap. A ping sweep is basically a collective ping command execution on a range of IP addresses.

3. ICMP is used in \_\_\_\_\_

- a) Ping
- b) Traceroute
- c) Ifconfig
- d) Both Ping & Traceroute

Answer: d

Explanation: ICMP stands for Internet Control Message Protocol. ICMP operates over the IP packet to provide error reporting functionality, so in case the node is not active or there is no route, ICMP will be used to report the specific errors for Ping and Traceroute.

4. \_\_\_\_\_ command is used to manipulate TCP/IP routing table.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

Answer: a

Explanation: The route command is used to view and manipulate the TCP/IP routing table in Windows OS. The manipulations done in the routing table with the help of this command will count as static routes.

5. If you want to find the number of routers between a source and destination, the utility to be used is \_\_\_\_\_

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

Answer: d

Explanation: Traceroute command is available on Linux OS to find the path i.e. the number of the routers that the packet has to go through to reach the destination. In Windows, Tracert command is used to perform the function.

6. Which of the following is not related to ipconfig in Microsoft Windows?

- a) Display all current TCP/IP network configuration values
- b) Modify DHCP settings
- c) Modify DNS settings

d) Trace the routers in the path to destination

Answer: d

Explanation: The Tracert command is available on Microsoft Windows to find the path i.e. the number of the routers that the packet has to go through to reach its destination.

7. \_\_\_\_\_ allows checking if a domain is available for registration.

- a) Domain Check
- b) Domain Dossier
- c) Domain Lookup
- d) Domain registers

Answer: a

Explanation: There are billions of domains available for registration on the World Wide Web, and many of them are already registered. So when one wants to register a domain, they need to check whether the domain is available through a domain check.

8. Choose the wrong statement from the following.

- a) Nslookup is used to query a DNS server for DNS data
- b) Ping is used to check connectivity
- c) Pathping combines the functionality of ping with that of route
- d) Ifconfig can configure TCP/IP network interface parameters

Answer: c

Explanation: Pathping combines the functionality of ping with that of traceroute (tracert). The Ping command is used to test connectivity between two nodes and the Tracert/Traceroute command is used to find the path i.e. the number of the routers that the packet has to go through to reach its destination.

1. Ethernet frame consists of \_\_\_\_\_

- a) MAC address
- b) IP address
- c) Default mask
- d) Network address

Answer: a

Explanation: The Ethernet frame has a header that contains the source and destination MAC address. Each MAC address is of 48 bits.

2. What is start frame delimiter (SFD) in ethernet frame?

- a) 10101010
- b) 10101011
- c) 00000000
- d) 11111111

Answer: b

Explanation: The start frame delimiter is a 1 byte field in the Ethernet frame that indicates that the preceding bits are the start of the frame. It is always set to 10101011.

3. MAC address is of \_\_\_\_\_

- a) 24 bits
- b) 36 bits
- c) 42 bits
- d) 48 bits

Answer: d

Explanation: MAC address is like a local address for the NIC that is used to make a local Ethernet (or wifi) network function. It is of 48 bits.

4. What is autonegotiation?

- a) a procedure by which two connected devices choose common transmission parameters
- b) a security algorithm
- c) a routing algorithm
- d) encryption algorithm

Answer: a

Explanation: autonegotiation is a procedure by which two connected devices choose common transmission parameters. It is a signaling mechanism used in Ethernet over Twisted pair cables.

5. Ethernet in metropolitan area network (MAN) can be used as \_\_\_\_\_

- a) pure ethernet
- b) ethernet over SDH
- c) ethernet over MPLS
- d) all of the mentioned

Answer: d

Explanation: A metropolitan area network (MAN) that is based on Ethernet standards is called an Ethernet MAN. It is commonly used to connect nodes to the Internet. Businesses also use Ethernet MANs to connect their own offices to each other.

6. A point-to-point protocol over ethernet is a network protocol for \_\_\_\_\_

- a) encapsulating PPP frames inside ethernet frames
- b) encapsulating ethernet frames inside PPP frames
- c) for security of ethernet frames
- d) for security of PPP frames

Answer: a

Explanation: PPoE or Point-to-Point protocol over Ethernet was first introduced in 1999. It is popularly used by modern day Internet Service Providers for Dial-up connectivity.

7. High speed ethernet works on \_\_\_\_\_

- a) coaxial cable
- b) twisted pair cable

- c) optical fiber
- d) unshielded twisted pair cable

Answer: c

Explanation: Fast Ethernet is mostly used in networks along with Category 5 (Cat-5) copper twisted-pair cable, but it also works with fiber-optic cable. Based on the cable being used, There can be three types of Fast Ethernet.

8. The maximum size of payload field in ethernet frame is \_\_\_\_\_

- a) 1000 bytes
- b) 1200 bytes
- c) 1300 bytes
- d) 1500 bytes

Answer: d

Explanation: The minimum size of the payload field is 40 bytes and the maximum size is 1500 bytes. If the payload size exceeds 1500 bytes, the frame is called a jumbo frame.

9. What is interframe gap?

- a) idle time between frames
- b) idle time between frame bits
- c) idle time between packets
- d) idle time between networks

Answer: a

Explanation: The inter-frame gap is the idle time for the receiver between the incoming frame flow. The inter-frame gap must be as low as possible for idle connections.

10. An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called \_\_\_\_\_

- a) short frame
- b) runt frame
- c) mini frame
- d) man frame

Answer: b

Explanation: An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called a runt frame. Such frames are a result of collisions or software malfunctions.

1. What is the access point (AP) in a wireless LAN?

- a) device that allows wireless devices to connect to a wired network
- b) wireless devices itself
- c) both device that allows wireless devices to connect to a wired network and wireless devices itself
- d) all the nodes in the network

Answer: a

Explanation: Access point in a wireless network is any device that will allow the wireless devices to a wired network. A router is the best example of an Access Point.

2. In wireless ad-hoc network \_\_\_\_\_

- a) access point is not required
- b) access point is must
- c) nodes are not required
- d) all nodes are access points

Answer: a

Explanation: An ad-hoc wireless network is a decentralized kind of a wireless network. An access point is usually a central device and it would go against the rules of the ad-hoc network to use one. Hence it is not required.

3. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA
- c) ALOHA
- d) CSMA/CD

Answer: b

Explanation: CSMA/CA stands for Carrier-sense multiple access/collision avoidance. It is a multiple access protocol used by IEEE 802.11 standard for wireless LAN. It's based on the principle of collision avoidance by using different algorithms to avoid collisions between channels.

4. In wireless distribution system \_\_\_\_\_

- a) multiple access point are inter-connected with each other
- b) there is no access point
- c) only one access point exists
- d) access points are not required

Answer: a

Explanation: A Wireless Distribution System allows the connection of multiple access points together. It is used to expand a wireless network to a larger network.

5. A wireless network interface controller can work in \_\_\_\_\_

- a) infrastructure mode
- b) ad-hoc mode
- c) both infrastructure mode and ad-hoc mode
- d) WDS mode

Answer: c

Explanation: A wireless network interface controller works on the physical layer and the data link layer of the OSI model. Infrastructure mode WNIC needs access point but in ad-hoc mode access point is not required.

6. In wireless network an extended service set is a set of \_\_\_\_\_

- a) connected basic service sets
- b) all stations
- c) all access points

- d) connected access points

Answer: a

Explanation: The extended service set is a part of the IEEE 802.11 WLAN architecture and is used to expand the range of the basic service set by allowing connection of multiple basic service sets.

7. Mostly \_\_\_\_\_ is used in wireless LAN.

- a) time division multiplexing
- b) orthogonal frequency division multiplexing
- c) space division multiplexing
- d) channel division multiplexing

Answer: b

Explanation: In orthogonal frequency division multiplexing, digital data is encoded on multiple carrier frequencies. It is also used in digital television and audio broadcasting in addition to Wireless LANs.

8. Which one of the following event is not possible in wireless LAN?

- a) collision detection
- b) acknowledgement of data frames
- c) multi-mode data transmission
- d) connection to wired networks

Answer: a

Explanation: Collision detection is not possible in wireless LAN with no extensions. Collision detection techniques for multiple access like CSMA/CD are used to detect collisions in Wireless LANs.

9. What is Wired Equivalent Privacy (WEP)?

- a) security algorithm for ethernet
- b) security algorithm for wireless networks
- c) security algorithm for usb communication
- d) security algorithm for emails

Answer: b

Explanation: WEP is a security algorithm for wireless network which intended to provide data confidentiality comparable to that of traditional wired networks. It was introduced in 1997.

10. What is WPA?

- a) wi-fi protected access
- b) wired protected access
- c) wired process access
- d) wi-fi process access

Answer: a

Explanation: WPA or WiFi Protected Access is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

1. What is internet?

- a) a single network
- b) a vast collection of different networks
- c) interconnection of local area networks
- d) interconnection of wide area networks

Answer: b

Explanation: Internet is nothing but an interconnected computer network providing a variety of communication facilities, consisting of a huge amount of small networks using standardized communication protocols.

2. To join the internet, the computer has to be connected to a \_\_\_\_\_

- a) internet architecture board
- b) internet society
- c) internet service provider
- d) different computer

Answer: c

Explanation: The ISPs (Internet Service Providers) are the main agents through which every computer is connected to the internet. They are licensed to allot public IP addresses to its customers in order to connect them to the internet.

3. Internet access by transmitting digital data over the wires of a local telephone network is provided by \_\_\_\_\_

- a) leased line
- b) digital subscriber line
- c) digital signal line
- d) digital leased line

Answer: b

Explanation: DSL (Digital Subscriber Line) is the technology designed to use the existing telephone lines to transport high-bandwidth data to service subscribers. DSL was used to allow the early users access to the internet and it provides dedicated, point-to-point, public network access.

4. ISP exchanges internet traffic between their networks by \_\_\_\_\_

- a) internet exchange point
- b) subscriber end point
- c) isp end point
- d) internet end point

Answer: a

Explanation: ISPs exchange internet traffic between their networks by using Internet Exchange Points. ISPs and CDNs are connected to each other at these physical locations are they help them provide better service to their customers.

5. Which of the following protocols is used in the internet?

- a) HTTP

- b) DHCP
- c) DNS
- d) DNS, HTTP and DNS

Answer: d

Explanation: HTTP is used to browse all the websites on the World Wide Web, DHCP is used to allot IPs automatically to the users on the internet, and DNS is used to connect the users to the host servers on the internet based on the Domain Name.

6. The size of an IP address in IPv6 is \_\_\_\_\_

- a) 32 bits
- b) 64 bits
- c) 128 bits
- d) 265 bits

Answer: c

Explanation: An IPv6 address is 128 bits long. Therefore, 2<sup>128</sup> i.e. 340 undecillion addresses are possible in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

7. Internet works on \_\_\_\_\_

- a) packet switching
- b) circuit switching
- c) both packet switching and circuit switching
- d) data switching

Answer: a

Explanation: Packet switching is the method based on which the internet works. Packet switching features delivery of packets of data between devices over a shared network.

8. Which one of the following is not an application layer protocol used in internet?

- a) remote procedure call
- b) internet relay chat
- c) resource reservation protocol
- d) local procedure call

Answer: c

Explanation: Resource reservation protocol is a transport layer protocol used on the internet. It operates over IPv4 and IPv6 and is designed to reserve resources required by the network layer protocols.

9. Which protocol assigns IP address to the client connected in the internet?

- a) DHCP
- b) IP
- c) RPC
- d) RSVP

Answer: a

Explanation: DHCP stands for Domain Host Control Protocol. It is responsible to remotely assign IP address to the clients connected to the internet. The server that performs this function is called the DHCP server.

10. Which one of the following is not used in media access control?

- a) ethernet
- b) digital subscriber line
- c) fiber distributed data interface
- d) packet switching

Answer: d

Explanation: Packet switching is not really related to media access control as it just features delivery of packets of data between devices over a shared network. Internet is actually based on packet switching.

1. An interconnected collection of piconet is called \_\_\_\_\_

- a) scatternet
- b) micronet
- c) mininet
- d) multinet

Answer: a

Explanation: Piconet is the basic unit of a bluetooth system having a master node and up to seven active slave nodes. A collection of piconets is called scatternet and a slave node of a piconet may act as a master in a piconet that is part of the scatternet.

2. In a piconet, there can be up to \_\_\_\_\_ parked nodes in the network.

- a) 63
- b) 127
- c) 255
- d) 511

Answer: c

Explanation: A slave node in a piconet can be instructed by the master node to go into parked mode. Then the slave node enters the parked mode in which the node is not disconnected from the network but is inactive unless the master wakes it up.

3. Bluetooth is the wireless technology for \_\_\_\_\_

- a) local area network
- b) personal area network
- c) metropolitan area network
- d) wide area network

Answer: b

Explanation: Bluetooth is a wireless technology used to create a wireless personal area network for

data transfer up to a distance of 10 meters. It operates on 2.45 GHz frequency band for transmission.

4. Bluetooth uses \_\_\_\_\_

- a) frequency hopping spread spectrum
- b) orthogonal frequency division multiplexing
- c) time division multiplexing
- d) channel division multiplexing

Answer: a

Explanation: Frequency hopping spread spectrum is a method of transmitting radio signals by rapidly changing the carrier frequency and is controlled by the codes known to the sender and receiver only.

5. Unauthorised access of information from a wireless device through a bluetooth connection is called \_\_\_\_\_

- a) bluemaking
- b) bluesnarfing
- c) bluestring
- d) bluescoping

Answer: b

Explanation: Unauthorised access of information from a wireless device through a bluetooth connection is called Bluesnarfing. It is done through exploiting the vulnerabilities of the Bluetooth device to steal the transmitted information.

6. What is A2DP (advanced audio distribution profile)?

- a) a bluetooth profile for streaming audio
- b) a bluetooth profile for streaming video
- c) a bluetooth profile for security
- d) a bluetooth profile for file management

Answer: a

Explanation: A2DP stands for Advanced Audio Distribution Profile is a transfer standard use to transmit high definition audio through Bluetooth. It is mainly used in Bluetooth speakers and wireless headphones.

7. In a piconet, one master device \_\_\_\_\_

- a) can not be slave
- b) can be slave in another piconet
- c) can be slave in the same piconet
- d) can be master in another piconet

Answer: b

Explanation: In a scatternet, a slave node of one piconet may act as a master in a piconet that is part of the scatternet. The scatternet uses this property to connect many piconets together to create a larger network.

8. Bluetooth transceiver devices operate in \_\_\_\_\_ band.

- a) 2.4 GHz ISM
- b) 2.5 GHz ISM
- c) 2.6 GHz ISM
- d) 2.7 GHz ISM

Answer: a

Explanation: Bluetooth operates on 2.45 GHz frequency ISM band for transmission. It is used to create a wireless personal area network for data transfer up to a distance of 10 meters.

9. Bluetooth supports \_\_\_\_\_

- a) point-to-point connections
- b) point-to-multipoint connection
- c) both point-to-point connections and point-to-multipoint connection
- d) multipoint to point connection

Answer: c

Explanation: In Bluetooth, each slave node communicates with the master of the piconet independently i.e. each master-slave connection is independent. The slave is not allowed to communicate with other slaves directly.

10. A scatternet can have maximum \_\_\_\_\_

- a) 10 piconets
- b) 20 piconets
- c) 30 piconets
- d) 40 piconets

Answer: a

Explanation: A scatternet can have maximum of 10 piconets and minimum of 2 piconets. To connect these piconets, a slave node of one piconet may act as a master in a piconet that is part of the scatternet.

1. WiMAX stands for \_\_\_\_\_

- a) wireless maximum communication
- b) worldwide interoperability for microwave access
- c) worldwide international standard for microwave access
- d) wireless internet maximum communication

Answer: b

Explanation: WiMAX or worldwide interoperability for microwave access is a set of wireless communication standards. It provides support for multiple physical layer (PHY) and Media Access Control (MAC) options. It is based on IEEE 802.16 standards.

2. WiMAX provides \_\_\_\_\_

- a) simplex communication
- b) half duplex communication
- c) full duplex communication

d) no communication

Answer: c

Explanation: WiMax was developed to provide wireless broadband access to buildings. It can also be used to connect WLAN hotspots to the Internet. It is based on IEEE 802.16 standards.

3. WiMAX uses the \_\_\_\_\_

- a) orthogonal frequency division multiplexing
- b) time division multiplexing
- c) space division multiplexing
- d) channel division multiplexing

Answer: a

Explanation: WiMAX physical layer uses orthogonal frequency division multiplexing as it provides simplified reception in multipath and allows WiMAX to operate in NLOS conditions.

4. Which of the following modulation schemes is supported by WiMAX?

- a) binary phase shift keying modulation
- b) quadrature phase shift keying modulation
- c) quadrature amplitude modulation
- d) all of the mentioned

Answer: d

Explanation: WiMAX supports a variety of modulation schemes such as binary phase shift keying modulation, quadrature phase shift keying modulation, and quadrature amplitude modulation and allows for the scheme to change on a burst-by-burst basis per link, depending on channel conditions.

5. WiMAX MAC layer provides an interface between \_\_\_\_\_

- a) higher transport layers and physical layer
- b) application layer and network layer
- c) data link layer and network layer
- d) session layer and application layer

Answer: a

Explanation: WiMAX provides support for multiple physical layer (PHY) on the physical layer and Media Access Control (MAC) options for higher layers to provide wireless broadband access to buildings.

6. For encryption, WiMAX supports \_\_\_\_\_

- a) advanced encryption standard
- b) triple data encryption standard
- c) advanced encryption standard and triple data encryption standard
- d) double data encryption standard

Answer: c

Explanation: Both advanced encryption standard and triple data encryption standard are block cipher techniques and are popularly used in WiMAX and other applications for secure encryption.

7. WiMAX provides \_\_\_\_\_

- a) VoIP services
- b) IPTV services
- c) Both VoIP and IPTV services
- d) no IPTV services

Answer: c

Explanation: IPTV can be transmitted over WiMAX, and relies on packet-switching to offer reliable delivery. VoIP can be operated over a WiMax network with no special hardware or software.

8. Devices that provide the connectivity to a WiMAX network are known as \_\_\_\_\_

- a) subscriber stations
- b) base stations
- c) gateway
- d) switch stations

Answer: a

Explanation: Subscriber stations in WiMAX are transceivers (transmitter and receivers). They are used to convert radio signals into digital signals that can be routed to and from communication devices. There is a variety of types of WiMAX subscriber stations like portable PCMCIA cards and fixed stations that provide service to multiple users.

9. WiMAX is mostly used for \_\_\_\_\_

- a) local area network
- b) metropolitan area network
- c) personal area network
- d) wide area network

Answer: b

Explanation: WiMAX provides Wi-Fi connectivity within the home or business for computers and smartphones. WiMAX network operators typically provide a WiMAX Subscriber Unit to do so. The subscriber unit is used to connect to the metropolitan WiMAX network.

10. Which of the following frequencies is not used in WiMAX for communication?

- a) 2.3 GHz
- b) 2.4 GHz
- c) 2.5 GHz
- d) 3.5 GHz

Answer: b

Explanation: The 2.4GHz ISM frequency band is used for personal area network technologies such as Bluetooth and hence is not suitable for WiMAX which is mostly used for Metropolitan Area Networks.

1. SONET stands for \_\_\_\_\_

- a) synchronous optical network
- b) synchronous operational network

- c) stream optical network
- d) shell operational network

Answer: a

Explanation: SONET stands for synchronous optical network. Frame relay uses SONET to physically transmit data frames over a Frame Relay network as SONET is cheaper and provides better network reliability than other carriers.

2. In SONET, STS-1 level of electrical signalling has the data rate of \_\_\_\_\_

- a) 51.84 Mbps
- b) 155.52 Mbps
- c) 2488.320 Mbps
- d) 622.080 Mbps

Answer: a

Explanation: STS-1 level provides the data rate of 51.84 Mbps, STS-3 provides a data rate of 155.52 Mbps, STS-12 provides a data rate of 622.080 Mbps and STS-48 provides a data rate of 2488.320 Mbps.

3. The path layer of SONET is responsible for the movement of a signal \_\_\_\_\_

- a) from its optical source to its optical destination
- b) across a physical line
- c) across a physical section
- d) back to its optical source

Answer: b

Explanation: The path layer in SONET is responsible for finding the path of the signal across the physical line to reach the optical destination. It is ideally expected to find the shortest and the most reliable path to the destination.

4. The photonic layer of the SONET is similar to the \_\_\_\_\_ of OSI model.

- a) network layer
- b) data link layer
- c) physical layer
- d) transport layer

Answer: c

Explanation: The photonic layer in SONET is like the physical layer of the OSI model. It is the lowest layer among the four layers of SONET namely the photonic, the section, the line, and the path layers.

5. In SONET, each synchronous transfer signal STS-n is composed of \_\_\_\_\_

- a) 2000 frames
- b) 4000 frames
- c) 8000 frames
- d) 16000 frames

Answer: c

Explanation: SONET defines the electrical signal as STS-N (Synchronous Transport Signal Level-N) and the optical signal as OC-N (Optical Carrier Level-N). The building block of SONET is the STS-1/OC-1 signal, which is based on an 8-kHz frame rate and operates at 51.84 Mbps.

6. Which one of the following is not true about SONET?

- a) frames of lower rate can be synchronously time-division multiplexed into a higher-rate frame
- b) multiplexing is synchronous TDM
- c) all clocks in the network are locked to a master clock
- d) STS-1 provides the data rate of 622.080Mbps

Answer: d

Explanation: In SONET, STS-N stands for Synchronous Transport Signal Level-N. STS-1 level provides the data rate of 51.84 Mbps, and STS-12 provides a data rate of 622.080 Mbps.

7. A linear SONET network can be \_\_\_\_\_

- a) point-to-point
- b) multi-point
- c) both point-to-point and multi-point
- d) single point

Answer: c

Explanation: Synchronous Optical Network (SONET) is basically an optical fiber point-to-point or ring network backbone that provides a way to accommodate additional capacity as the needs of the organization increase to multipoint networks.

8. Automatic protection switching in linear network is defined at the \_\_\_\_\_

- a) line layer
- b) section layer
- c) photonic layer
- d) path layer

Answer: a

Explanation: The Line layer in SONET operates like the data link layer in the OSI model and it is responsible for the movement of signal across a physical line. The Synchronous Transport Signal Mux/Demux and Add/Drop Mux provide the Line layer functions.

9. A unidirectional path switching ring is a network with \_\_\_\_\_

- a) one ring
- b) two rings
- c) three rings
- d) four rings

Answer: b

Explanation: One ring is used as the working ring and other as the protection ring in which each node is connected to its respective adjacent nodes by two fibers, one to transmit, and one to receive.

10. What is SDH?

- a) sdh is similar standard to SONET developed by ITU-T
- b) synchronous digital hierarchy
- c) sdh stands for synchronous digital hierarchy and is a similar standard to SONET developed by ITU-T
- d) none of the mentioned

Answer: c

Explanation: SDH is a standard that allows low bit rates to be combined into high-rate data streams and as it is synchronous, each individual bit stream can be embedded into and extracted from high-rate data streams easily.

1. Real-time transport protocol (RTP) is mostly used in \_\_\_\_\_

- a) streaming media
- b) video teleconference
- c) television services
- d) all of the mentioned

Answer: d

Explanation: RTP stands for Real-time transport protocol and is for delivering audio and video over IP networks. Its applications include streaming media, video teleconference, and television services.

2. RTP is used to \_\_\_\_\_

- a) carry the media stream
- b) monitor transmission statistics of streams
- c) monitor quality of service of streams
- d) secure the stream

Answer: a

Explanation: RTP is used to carry the media stream for delivering audio and video over IP networks. Its applications include streaming media, video teleconference, and television services.

3. RTP provides the facility of jitter \_\_\_\_\_

- a) media stream
- b) expansion
- c) media modification
- d) security

Answer: a

Explanation: RTP provides the facility of jitter media stream through a jitter buffer which works by reconstructing the sequence of packets on the receiving side. Then an even audio / video stream is generated.

4. Which protocol provides the synchronization between media streams?

- a) RTP
- b) RTCP
- c) RPC

d) RTCT

Answer: b

Explanation: RTCP stands for Real-time Transport Control Protocol and it works with RTP to send control packets to the users of the networks while RTP handles the actual data delivery.

5. An RTP session is established for \_\_\_\_\_

- a) each media stream
- b) all media streams
- c) some predefined number of media streams
- d) no media stream

Answer: a

Explanation: An RTP session is required to be established for each media stream for delivering audio and video over the IP network. Each session has independent data transmission.

6. RTP can use \_\_\_\_\_

- a) unprivileged UDP ports
- b) stream control transmission protocol
- c) datagram congestion control protocol
- d) all of the mentioned

Answer: d

Explanation: RTP uses unprivileged UDP ports, stream control transmission protocol, and datagram congestion control protocol for data delivery over IP networks.

7. Which one of the following multimedia formats can not be supported by RTP?

- a) MPEG-4
- b) MJPEG
- c) MPEG
- d) TXT

Answer: d

Explanation: RTP is suitable only for multimedia and not for simple text files as the operation would result into wastage of resources. Other protocols like FTP are suitable for such transmissions.

8. An RTP header has a minimum size of \_\_\_\_\_

- a) 12 bytes
- b) 16 bytes
- c) 24 bytes
- d) 32 bytes

Answer: a

Explanation: Each RTP packet has a fixed header of size 12 bytes that contains essential control information like timestamp, payload type etc. for the receiving system processing.

9. Which one of the following is not correct?

- a) RTCP provides canonical end-point identifiers to all session participants
- b) RTCP reports are expected to be sent by all participants
- c) RTCP itself does not provide any flow encryption or authentication methods
- d) RTCP handles the actual data delivery

Answer: d

Explanation: RTCP works with RTP to send control packets to the users of the networks and provide canonical end-point identifiers to all session participants while RTP handles the actual data delivery.

10. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?

- a) SRTP
- b) RTCP
- c) RCP
- d) RTCT

Answer: a

Explanation: SRTP stands for Secure Real-time Transport Protocol. It is like an extension to RTP which provides stream security through encryption, message authentication and integrity, and replay attack protection.

1. An RPC (remote procedure call) is initiated by the \_\_\_\_\_

- a) server
- b) client
- c) client after the sever
- d) a third party

Answer: b

Explanation: Remote Procedure Call is a method used for constructing distributed, client-server applications based on extending the conventional local procedure calling where the client initiates an RPC to start a connection process.

2. In RPC, while a server is processing the call, the client is blocked \_\_\_\_\_

- a) unless the client sends an asynchronous request to the server
- b) unless the call processing is complete
- c) for the complete duration of the connection
- d) unless the server is disconnected

Answer: a

Explanation: While the server is processing the call i.e. looking through the specifications, the client is blocked, unless the client sends an asynchronous request to the server for another operation.

3. A remote procedure call is \_\_\_\_\_

- a) inter-process communication
- b) a single process
- c) a single thread

d) a single stream

Answer: a

Explanation: Remote procedure calls is a form of inter-process communication where the client initiates an RPC to start a connection process. It is used to construct distributed, client-server applications.

4. RPC allows a computer program to cause a subroutine to execute in \_\_\_\_\_

- a) its own address space
- b) another address space
- c) both its own address space and another address space
- d) applications address space

Answer: b

Explanation: RPC allows a computer program to cause a subroutine to execute in another address space which is usually the servers address space in a conventional client-server network.

5. RPC works between two processes. These processes must be \_\_\_\_\_

- a) on the same computer
- b) on different computers connected with a network
- c) on the same computer and also on different computers connected with a network
- d) on none of the computers

Answer: c

Explanation: For the operation of RPC between two processes, it is mandatory that the processes are present on the same computer and also on different computers connected with its network.

6. A remote procedure is uniquely identified by \_\_\_\_\_

- a) program number
- b) version number
- c) procedure number
- d) all of the mentioned

Answer: d

Explanation: Each remote procedure can be uniquely identified by the program number, version number and the procedure number in the networks scope. The identifiers can be used to control the remote procedure by parties involved in the process.

7. An RPC application requires \_\_\_\_\_

- a) specific protocol for client server communication
- b) a client program
- c) a server program
- d) all of the mentioned

Answer: d

Explanation: The RPC technique for constructing distributed, client-server applications based on

extending the conventional local procedure calling. It requires a client program, a server program and specific protocol for client server communication to build the system.

8. RPC is used to \_\_\_\_\_

- a) establish a server on remote machine that can respond to queries
- b) retrieve information by calling a query
- c) establish a server on remote machine that can respond to queries and retrieve information by calling a query
- d) to secure the client

Answer: c

Explanation: RPC or Remote Procedure Call is used to establish a server on remote machine that can respond to queries and to retrieve information by calling a query by other computers.

9. RPC is a \_\_\_\_\_

- a) synchronous operation
- b) asynchronous operation
- c) time independent operation
- d) channel specific operation

Answer: a

Explanation: RPC is a synchronous operation where the remote machine works in sync with the other machines to act as a server that can respond to queries called by the other machines.

10. The local operating system on the server machine passes the incoming packets to the \_\_\_\_\_

- 
- a) server stub
  - b) client stub
  - c) client operating system
  - d) client process

Answer: a

Explanation: The local operating system on the server machine passes the incoming packets to the server stub which then processes the packets which contain the queries from the client machines for retrieving information.

1. Which of the following is an advantage of anomaly detection?

- a) Rules are easy to define
- b) Custom protocols can be easily analyzed
- c) The engine can scale as the rule set grows
- d) Malicious activity that falls within normal usage patterns is detected

Answer: c

Explanation: Once a protocol has been built and a behavior defined, the engine can scale more quickly and easily than the signature-based model because a new signature does not have to be created for every attack and potential variant.

2. A false positive can be defined as \_\_\_\_\_

- a) An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior
- b) An alert that indicates nefarious activity on a system that is not running on the network
- c) The lack of an alert for nefarious activity
- d) Both An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior and An alert that indicates nefarious activity on a system that is not running on the network

Answer: d

Explanation: A false positive is any alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior.

3. One of the most obvious places to put an IDS sensor is near the firewall. Where exactly in relation to the firewall is the most productive placement?

- a) Inside the firewall
- b) Outside the firewall
- c) Both inside and outside the firewall
- d) Neither inside the firewall nor outside the firewall.

Answer: a

Explanation: There are legitimate political, budgetary and research reasons to want to see all the “attacks” against your connection, but given the care and feeding any IDS requires, do yourself a favor and keep your NIDS sensors on the inside of the firewall.

4. What is the purpose of a shadow honeypot?

- a) To flag attacks against known vulnerabilities
- b) To help reduce false positives in a signature-based IDS
- c) To randomly check suspicious traffic identified by an anomaly detection system
- d) To enhance the accuracy of a traditional honeypot

Answer: c

Explanation: “Shadow honeypots,” as researchers call them, share all the same characteristics of protected applications running on both the server and client side of a network and operate in conjunction with an ADS.

5. At which two traffic layers do most commercial IDSe generate signatures?

- a) Application layer and Network layer
- b) Network layer and Session Layer
- c) Transport layer and Application layer
- d) Transport layer and Network layer

Answer: d

Explanation: Most commercial IDSe generate signatures at the network and transport layers. These signatures are used to ensure that no malicious operation is contained in the traffic. Nemean generates signature at application and session layer.

6. IDS follows a two-step process consisting of a passive component and an active component.

Which of the following is part of the active component?

- a) Inspection of password files to detect inadvisable passwords
- b) Mechanisms put in place to reenact known methods of attack and record system responses
- c) Inspection of system to detect policy violations
- d) Inspection of configuration files to detect inadvisable settings

Answer: b

Explanation: Secondary components of mechanism are set in place to reenact known methods of attack and to record system responses. In passive components, the system I designed just to record the system's responses in case of an intrusion.

7. When discussing IDS/IPS, what is a signature?

- a) An electronic signature used to authenticate the identity of a user on the network
- b) Attack-definition file
- c) It refers to “normal,” baseline network behavior
- d) It is used to authorize the users on a network

Answer: b

Explanation: IDSe work in a manner similar to modern antivirus technology. They are constantly updated with attack-definition files (signatures) that describe each type of known malicious activity. Nemean is a popular signature generation method for conventional computer networks.

8. “Semantics-aware” signatures automatically generated by Nemean are based on traffic at which two layers?

- a) Application layer and Transport layer
- b) Network layer and Application layer
- c) Session layer and Transport layer
- d) Application layer and Session layer

Answer: d

Explanation: Nemean automatically generates “semantics-aware” signatures based on traffic at the session and application layers. These signatures are used to ensure that no malicious operation is contained in the traffic.

9. Which of the following is used to provide a baseline measure for comparison of IDSe?

- a) Crossover error rate
- b) False negative rate
- c) False positive rate
- d) Bit error rate

Answer: a

Explanation: As the sensitivity of systems may cause the false positive/negative rates to vary, it's critical to have some common measure that may be applied across the board.

10. Which of the following is true of signature-based IDSe?

- a) They alert administrators to deviations from “normal” traffic behavior

- b) They identify previously unknown attacks
- c) The technology is mature and reliable enough to use on production networks
- d) They scan network traffic or packets to identify matches with attack-definition files

Answer: d

Explanation: They are constantly updated with attack-definition files (signatures) that describe each type of known malicious activity. They then scan network traffic for packets that match the signatures, and then raise alerts to security administrators.

1. Both HDLC and PPP are Data link layer protocols.

- a) True
- b) False

Answer: a

Explanation: Both HDLC and PPP both are Data link layer protocol. HDLC stands for High level Data Link Control and PPP stands for Point to Point Protocol.

2. Which protocol does the PPP protocol provide for handling the capabilities of the connection/link on the network?

- a) LCP
- b) NCP
- c) Both LCP and NCP
- d) TCP

Answer: c

Explanation: LCP stands for Link Control Protocol and NCP stands for Network Control Protocol. LCP and NCP are the PPP protocols which provide interface for handling the capabilities of the connection/link on the network.

3. The PPP protocol \_\_\_\_\_

- a) Is designed for simple links which transport packets between two peers
- b) Is one of the protocols for making an Internet connection over a phone line
- c) Is designed for simple links which transport packets between two peers and making an Internet connection over a phone line
- d) Is used for sharing bandwidth

Answer: c

Explanation: The PPP protocol is designed for handling simple links which transport packets between two peers. It is a standard protocol that is used to make an Internet connection over phone lines.

4. PPP provides the \_\_\_\_\_ layer in the TCP/IP suite.

- a) Link
- b) Network
- c) Transport
- d) Application

Answer: a

Explanation: PPP provides function of the link layer in the TCP/IP suite. It focuses on the link between two nodes that is going to be used by the users to communicate. It can use pre-installed phone line for the purpose.

5. PPP consists of \_\_\_\_\_ components

- a) Three (encapsulating, the Domain Name system)
- b) Three (encapsulating, a link control protocol, NCP)
- c) Two (a link control protocol, Simple Network Control protocol)
- d) One (Simple Network Control protocol)

Answer: b

Explanation: PPP consists of three components namely Link Control Protocol (LCP), Network Control Protocol (NCP), and Encapsulation. LCP and NCP are the PPP protocols which provide interface for handling the capabilities of the connection/link on the network and encapsulation provides for multiplexing of different network-layer protocols.

6. The PPP encapsulation \_\_\_\_\_

- a) Provides for multiplexing of different network-layer protocols
- b) Requires framing to indicate the beginning and end of the encapsulation
- c) Establishing, configuring and testing the data-link connection
- d) Provides interface for handling the capabilities of the connection/link on the network

Answer: a

Explanation: Encapsulation is a part of PPP which provides means for multiplexing of different network-layer protocols. The other two parts of PPP are Link Control Protocol and Network Control Protocol.

7. A Link Control Protocol (LCP) is used for \_\_\_\_\_

- a) Establishing, configuring and testing the data-link connection
- b) Establishing and configuring different network-layer protocols
- c) Testing the different network-layer protocols
- d) Provides for multiplexing of different network-layer protocols

Answer: a

Explanation: The Link Control Protocol (LCP) is the part of PPP that is used for establishing, configuring and testing the data-link connection. The other two components are Network Control Protocol and Encapsulation.

8. A family of network control protocols (NCPs) \_\_\_\_\_

- a) Are a series of independently defined protocols that provide a dynamic
- b) Are a series of independently-defined protocols that encapsulate
- c) Are a series of independently defined protocols that provide transparent
- d) The same as NFS

Answer: b

Explanation: The family of network control protocols (NCPs) is a series of independently-defined

protocols that encapsulate the data flowing between the two nodes. It provides means for the network nodes to control the link traffic.

9. Choose the correct statement from the following.

- a) PPP can terminate the link at any time
- b) PPP can terminate the link only during the link establishment phase
- c) PPP can terminate the link during the authentication phase
- d) PPP can terminate the link during the callback control phase

Answer: a

Explanation: PPP allows termination of the link at any time in any phase because it works on the data link layer which is the layer in control of the link of the communication.

10. The link necessarily begins and ends with this phase. During the \_\_\_\_\_ phase, the LCP automata will be in INITIAL or STARTING states.

- a) Link-termination phase
- b) Link establishment phase
- c) Authentication phase
- d) Link dead phase

Answer: d

Explanation: The link necessarily begins and ends with the link dead phase. During this phase, the LCP automata will be in the initial or its final state. The link is non-functioning or inactive during the link dead phase.

1. EIGRP is a routing protocol design by Cisco.

- a) True
- b) False

Answer: a

Explanation: EIGRP stands for Enhanced Interior Gateway Routing Protocol is a routing protocol designed by Cisco. It is available only on Cisco routers.

2. EIGRP metric is \_\_\_\_\_

- a) K-values
- b) Bandwidth only
- c) Hop Count
- d) Delay only

Answer: a

Explanation: EIGRP metric is K-values which are integers from 0 to 128. They are used to calculate the overall EIGRP cost with bandwidth and delay metrics.

3. EIGRP can support \_\_\_\_\_

- a) VLSM/subnetting
- b) Auto summary
- c) Unequal cast load balancing

- d) All of the mentioned

Answer: d

Explanation: EIGRP supports variable and fixed length subnetting, Auto summary, and Unequal cost load balancing to provide efficient routing functionality on Cisco routers.

4. EIGRP sends a hello message after every \_\_\_\_\_ seconds.

- a) 5 seconds (LAN), 60 seconds (WAN)
- b) 5 seconds (LAN), 5 seconds (WAN)
- c) 15s
- d) 180s

Answer: a

Explanation: EIGRP routers broadcast the hello packets frequently to familiarize with the neighbors. EIGRP routers send the hello message after every 5 seconds on LAN, and every 60 seconds on WAN.

5. Administrative distance for internal EIGRP is \_\_\_\_\_

- a) 90
- b) 170
- c) 110
- d) 91

Answer: a

Explanation: Routers use the metric of administrative distance to select the best path when there are different routes to the same destination from two different routing protocols as it is a measure of reliability of routing protocols. Administrative distance for internal EIGRP is 90.

6. The EIGRP metric values include:

- a) Delay
- b) Bandwidth
- c) MTU
- d) All of the mentioned

Answer: d

Explanation: The EIGRP metric values are Delay, Bandwidth, and MTU. MTU stands for Maximum Transmission Unit. They are combined together to give the overall EIGRP cost in K-values.

7. For default gateway, which of following commands will you use on a Cisco router?

- a) IP default network
- b) IP default gateway
- c) IP default route
- d) Default network

Answer: a

Explanation: IP default network command is used to find the default gateway in Cisco router. If the router finds routes to the node, it considers the routes to that node for installation as the gateway to it.

8. Administrative distance for external EIGRP route is \_\_\_\_\_

- a) 90
- b) 170
- c) 110
- d) 100

Answer: b

Explanation: Routers use the metric of administrative distance to select the best path when there are different routes to the same destination from two different routing protocols as it is a measure of reliability of routing protocols. Administrative distance for external EIGRP is 170.

9. EIGRP uses the \_\_\_\_\_ algorithm for finding shortest path.

- a) SPF
- b) DUAL
- c) Linkstat
- d) Djikstra's

Answer: b

Explanation: EIGRP uses the DUAL algorithm for finding shortest path. DUAL stands for diffusing update algorithm and it is used to prevent routing loops by recalculating routes globally.

10. In EIGRP best path is known as the successor, where as backup path is known as \_\_\_\_\_

- a) Feasible successor
- b) Back-up route
- c) Default route
- d) There is no backup route in EIGRP

Answer: a

Explanation: Feasible successor is the backup path. The backup path is used alternatively used whenever the best path fails. It is not used primarily because it is comparatively expensive than the best path.

1. \_\_\_\_\_ allows LAN users to share computer programs and data.

- a) Communication server
- b) Print server
- c) File server
- d) Network

Answer: c

Explanation: A file server allows LAN users to share computer programs and data. It uses the File Transfer Protocol to provide this feature on the ports 20 and 21. The file server works as a medium for the transfer.

2. STP stands for \_\_\_\_\_

- a) Shielded twisted pair cable
- b) Spanning tree protocol
- c) Static transport protocol

- d) Shielded two power cable

Answer: a

Explanation: STP stands for Shielded twisted pair cable. 100 mbps is the max data capacity of STP and its default connector is RJ45. It is popularly used in LANs due to its ease of maintenance and installation.

3. A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of \_\_\_\_\_

- a) LAN intrinsic software
- b) LAN aware software
- c) Groupware
- d) LAN ignorant software

Answer: a

Explanation: A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of LAN intrinsic software. They are used to give better functionality of the program and the applications working over it to the users of the LAN.

4. The \_\_\_\_\_ portion of LAN management software restricts access, records user activities and audit data etc.

- a) Configuration management
- b) Security management
- c) Performance management
- d) Recovery management

Answer: b

Explanation: The Security management portion of LAN management software restricts access, records user activities and audit data. It is responsible for controlling access to the network based on predefined policy. The security management ensures authentication, confidentiality and integrity in the LAN.

5. What is the max cable length of STP?

- a) 100 ft
- b) 200 ft
- c) 100 m
- d) 200 m

Answer: c

Explanation: The max cable length of STP is 100 meters. If the length exceeds 100 meters, the loss of signals flowing through the cable would be really high. Thus, STP is more suitable smaller networks like LANs.

6. What is the max data transfer rate of STP?

- a) 10 mbps
- b) 100 mbps

- c) 1000 mbps
- d) 10000 mbps

Answer: b

Explanation: 100 mbps is the max data transfer rate which can be handled by STP. STP stands for Shielded twisted pair cable and its default connector is RJ-45. 100 mbps is a feasible data transfer rate for small networks like LANs.

7. Which connector does STP use?

- a) BNC
- b) RJ-11
- c) RJ-45
- d) RJ-69

Answer: c

Explanation: RJ-45 is used for STP cable. STP stands for Shielded twisted pair cable and 100 mbps is the max data transfer rate which can be handled by STP. RJ-45 is popularly used to connect to modern day routers, computer network cards and other network devices.

8. What is the central device in star topology?

- a) STP server
- b) Hub/switch
- c) PDC
- d) Router

Answer: b

Explanation: In star topology, no computer is connected to another computer directly but all the computers are connected to a central switch or hub. Every message sent from a source computer goes through the switch or hub and the switch or hub then forwards the message only to the intended destination computer.

9. What is the max data transfer rate for optical fiber cable?

- a) 10 mbps
- b) 100 mbps
- c) 1000 mbps
- d) 10000 mbps

Answer: c

Explanation: 1000 mbps is the max data transfer rate for optical fiber cables. It is said to be the fastest among the other kinds of cables like STP, and co-axial cables. People are now using optical fiber cables instead of STP for LANs due to its fast data transfer capability.

10. Which of the following architecture uses CSMA/CD access method?

- a) ARC net
- b) Ethernet
- c) Router

d) STP server

Answer: b

Explanation: Collision detection is not possible in Ethernet without extensions. Collision detection techniques for multiple access like CSMA/CD are used to detect collisions in the Ethernet architecture.

Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
- 3) Use of calculator is allowed.
- 4) Each question carries 1 Mark.
- 5) Specially abled students are allowed 20 minutes extra for examination.
- 6) Do not use pencils to darken answer.
- 7) Use only black/blue ball point pen to darken the appropriate circle.
- 8) No change will be allowed once the answer is marked on OMR Sheet.
- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

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**Q.no 1. Which Method can be used for to reduce the collision but canot eliminate it**

A : Listen before talk

B : Listen after talk

C : Sense after transmit

D : Sense before talk

**Q.no 2. \_\_\_\_\_ topology requires a multipoint connection.**

A : Star

B : Mesh

C : Ring

D : Bus

**Q.no 3. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

B : IP

C : Physical

D : Subnet Mask

**Q.no 4. Which one of the following is an internet standard protocol for managing devices on IP network?**

A : dynamic host configuration protocol

B : simple network management protocol

C : internet message access protocol

D : media gateway protocol

**Q.no 5. Application layer protocol defines \_\_\_\_\_**

A : types of messages exchanged

B : message unformatted

C : Message Request and Response

D : Message Syntax and Semantics

**Q.no 6. In pure Aloha what is maximum number of retransmission attempts if frame get congested in the channel**

A : Two half

B : One Half

C : Three half

D : Four half

**Q.no 7. In Slotted Aloha, the vulnerable time is reduced to \_\_\_\_\_ equal to the frame transmission time**

A : Pure Aloha

B : Slotted Aloha

C : CSMA

D : FDMA

**Q.no 8. The protocol which is used for defining the legal request and replies is called \_\_\_\_\_.**

A : FTP

B : SMTP

C : TCP

**D : HTTP**

**Q.no 9. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

A : Class B

B : Class c

**C : Forwarder**

D : Class D

**Q.no 10. The client in socket programming must know which information?**

A : IP address of Server

B : Port number

**C : Both IP address of Server & Port number**

D : Only its own IP address

**Q.no 11. In TCP, sending and receiving data is done as \_\_\_\_\_**

**A : Stream of bytes**

B : Sequence of characters

C : Lines of data

D : Packets

**Q.no 12. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

D : Routes to use for forwarding data to its destination

**Q.no 13. Modulator and demodulator as combinely is known as –**

A : Modulus

**B : Modem**

C : Mod switch

D : Mod access

**Q.no 14. Which network is able to connect to each computer through a common central line?**

**A : Bus**

B : Star

C : router

D : WAN

**Q.no 15. AODV stands for**

**A : Ad hoc On-Demand Distance Vector**

B : Advance ondemand distance vector

C : Advance on distance vector

D : All of these

**Q.no 16. When the mail server sends mail to other mail servers it becomes**

---

A : SMTP server

**B : SMTP client**

C : Peer

D : Master

**Q.no 17. Ipv6 is how many bits long**

A : 32

B : 48

C : 128

D : 16

**Q.no 18. RTP provides the facility of jitter \_\_\_\_\_**

A : media stream

B : expansion

C : media modification

D : security

**Q.no 19. A simple protocol used for fetching email from a mail box is**

A : POP3

B : IMAP

C : SMTP

D : POP2

**Q.no 20. HDLC protocol resides in \_\_\_ layer**

A : Data Link Layer

B : Application Layer

C : Transport Layer

D : Network Layer

**Q.no 21. Radio channels are attractive medium because**

A : Can penetrate walls

B : Connectivity can be given to mobile user

C : Can carry signals for long distance

D : All of the mentioned

**Q.no 22. Bridge works in which layer of the OSI model?**

A : Appliation layer

B : Transport layer

C : Network layer

**D : Datalink layer**

**Q.no 23. Which of the following address belongs class A?**

**A : 121.12.12.248**

B : 130.12.12.248

C : 128.12.12.248

D : 129.12.12.248

**Q.no 24. \_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

**A : FDM**

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 25. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

**D : 255.255.255.224**

**Q.no 26. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

**C : Determines on which outing link a packet is to be forwarded**

D : Forwards a packet to all outgoing links except the originated link

**Q.no 27. In sliding window protocol, the send window can slide one or more slots when valid \_\_\_\_ arrives.**

A : bit

B : request

C : flag

**D : acknowledgement**

**Q.no 28. Which Strategies used by CSMA with collision avoidance**

A : 1500 bytes , 46 bytes

**B : 46 bytes, 1500 bytes**

C : 64 bytes, 1518 bytes

D : 512 bits, 12144 bytes

**Q.no 29. In byte stuffing (or character stuffing), a special byte known as \_\_\_\_ is added to the data section of the frame when there is a character with the same pattern as the flag.**

A : excuse character

B : entry character

C : exit character

**D : escape character**

**Q.no 30. ARQ stands for \_\_\_\_**

**A : Automatic repeat request**

B : Automatic repeat quantization

C : Acknowledgement repeat request

D : Automatic resend request

**Q.no 31. Which one of the following is not correct?**

A : RTCP provides canonical end-point identifiers to all session participants

B : RTCP reports are expected to be sent by all participants

C : RTCP itself does not provide any flow encryption or authentication methods

D : RTCP handles the actual data delivery

**Q.no 32. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_**

A : stream mode

B : block mode

C : compressed mode

D : message mode

**Q.no 33. In the network HTTP resources are located by \_\_\_\_\_**

A : Uniform resource identifier

B : Unique resource locator

C : Unique resource identifier

D : Union resource locator

**Q.no 34. In HDLC which frames are used to transport user data and control information relating to user data (piggybacking)?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 35. In FTP protocol, client contacts server using \_\_\_ as the transport protocol.**

A : transmission control protocol

B : user datagram protocol

C : datagram congestion control protocol

D : stream control transmission protocol

**Q.no 36. How many different type of server exist?**

A : Only one

B : Two

C : Three

D : Four

**Q.no 37. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

**C : resource reservation protocol**

D : session initiation protocol

**Q.no 38. What is the use of Ping command?**

**A : To test a device on the network is reachable**

B : To test a hard disk fault

C : To test a bug in a Application

D : To test a Pinter Quality

**Q.no 39. Which of the following layer of OSI model also called end-to-end layer?**

A : Presentation layer

B : Network layer

C : Session layer

**D : Transport layer**

**Q.no 40. The frame transmission and collision detection is a continuous process which method is used for this condition**

A : Idle,Captured the channel and sending its Frame, collision detection

**B : Captured the channel and sending its Frame,Idle, collision detection**

C : Idle, collision detection,Captured the channel and sending its Frame

D : Captured the channel and sending its Frame, collision detection,Idle

**Q.no 41. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 42. Which of the following statements is TRUE about CSMA with collision detection**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 43. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 44. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for \_\_\_\_\_ channels.**

A : signal

B : wireless

C : noisy

D : noiseless

**Q.no 45. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 46. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

**B : 10001**

C : 12001

D : 11001

**Q.no 47. \_\_\_ refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.**

**A : Flow control**

B : Speed control

C : Error control

D : Data control

**Q.no 48. A 4 byte IP address consists of \_\_\_\_\_**

A : only network address

B : only host address

**C : network address & host address**

D : network address & MAC address

**Q.no 49. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

**A : Application layer**

B : Transport layer

C : Link layer

D : Session layer

**Q.no 50. IPv6 does not support which of the following addressing modes?**

A : unicast addressing

B : multicast addressing

C : broadcast addressing

D : anycast addressing

**Q.no 51. Simplex protocol of Data Link Layer works on \_\_\_ channels**

A : noiseless

B : broadband

C : noisy

D : creative

**Q.no 52. Each frame in HDLC protocol may contain up \_\_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 53. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

D : 128.64.0.0

**Q.no 54. Which of the following routing protocol used for network layer design?**

A : Static Routing Algorithm

B : Distance vector routing Protocol

C : Dynamic Routing Algorithm

D : Hybrid Routing Algorithm

**Q.no 55. What does the java.net.InetAddress class represent?**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 56. Define the type of the following destination MAC address**

**4A:30:10:21:10:1A**

A : IEEE 802.11 wireless LAN runs CSMA with collision detection protocol

B : Ethernet is not based on CSMA with collision detection protocol

**C : CSMA with collision detection is not suitable for a high propagation delay network like satellite network**

D : There is no contention in a CSMA with collision detection network

**Q.no 57. For which one of the following reasons does Internet Protocol (IP) use the time-to-live (TTL) field in the IP datagram header**

A : Ensure packets reach destination within that time

B : Discard packets that reach later than that time

**C : prevent packets from looping indefinitely**

D : Limit the time for which the packet gets queued in intermediate routers

**Q.no 58. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

**D : internet corporation for assigned names and numbers**

**Q.no 59. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

**C : NRM**

D : ABM

**Q.no 60. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

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**Answer for Question No 1. is a**

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**Answer for Question No 2. is d**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is c**

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**Answer for Question No 8. is d**

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**Answer for Question No 9. is c**

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**Answer for Question No 10. is c**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is d**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is a**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is b**

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**Answer for Question No 17. is c**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is a**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is d**

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**Answer for Question No 22. is d**

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**Answer for Question No 23. is a**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is d**

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**Answer for Question No 26. is c**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is b**

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**Answer for Question No 29. is d**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is d**

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**Answer for Question No 32. is d**

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**Answer for Question No 33. is a**

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**Answer for Question No 34. is b**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is d**

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**Answer for Question No 37. is c**

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**Answer for Question No 38. is a**

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**Answer for Question No 39. is d**

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**Answer for Question No 40. is b**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is b**

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**Answer for Question No 44. is c**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is b**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is c**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is c**

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**Answer for Question No 51. is a**

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**Answer for Question No 52. is c**

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**Answer for Question No 53. is d**

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**Answer for Question No 54. is b**

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**Answer for Question No 55. is b**

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**Answer for Question No 56. is c**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is d**

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**Answer for Question No 59. is c**

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**Answer for Question No 60. is d**

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Seat No -

Total number of questions : 60

## 12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. In the congestion avoidance algorithm, the size of the congestion window increases \_\_\_\_\_ until congestion is detected.**

A : exponentially

**B : additively**

C : multiplicatively

D : suddenly

**Q.no 2. CIDR stands for**

**A : Classless Inter-Domain Routing**

B : Classless Intra-Domain Routing

C : Classful Inter-Domain Routing

D : Classful Intra-Domain Routing

**Q.no 3. How many layers are in the TCP/IP model?**

A : 4 layers

**B : 5 layers**

C : 6 layers

D : 7 layers

**Q.no 4. IEEE created Gigabit Ethernet under the name \_\_\_\_\_**

A : Four

**B : Eight**

C : Six

D : Seven

**Q.no 5. Hardware address is known as \_\_\_\_\_**

A : wireless maximum communication

**B : worldwide interoperability for microwave access**

C : worldwide international standard for microwave access

D : wireless internet maximum communication

**Q.no 6. The IEEE standard used for wimax technology is**

A : 12.2

**B : 18.4**

C : 36.8

D : 13.5

**Q.no 7. What is the purpose of the DHCP server?**

A : to provide storage for email

B : to translate URLs to IP addresses

C : to translate IPv4 addresses to MAC addresses

**D : to provide an IP configuration information to hosts**

**Q.no 8. \_\_\_ codes are created to correct errors**

A : bar

B : uni

C : cyclic

D : hash

**Q.no 9. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 10. The correction of errors is \_\_\_ the detection.**

A : more difficult than

B : easier

C : similar

D : None of the above

**Q.no 11. Physical or logical arrangement of network is ?**

A : Topology

B : Routing

C : Networking

D : Control

**Q.no 12. Which network is able to connect to each computer through a common central line?**

A : Bus

B : Star

C : router

D : WAN

**Q.no 13. Which of the following can be Software?**

A : Routers

**B : Firewalls**

C : bridge

D : Modems

**Q.no 14. In TCP, sending and receiving data is done as \_\_\_\_\_**

**A : Stream of bytes**

B : Sequence of characters

C : Lines of data

D : Packets

**Q.no 15. The address resolution protocol (ARP) is used for**

A : Finding the IP address from the DNS

B : Finding the IP address of the default gateway

C : Finding the IP address that corresponds to a MAC address

**D : Finding the MAC address that corresponds to an IP address**

**Q.no 16. A \_\_\_\_\_ set of rules that governs data communication.**

**A : Protocols**

B : Standards

C : RFCs

D : Servers

**Q.no 17. MAC Address is the example of**

A : Transport Layer

**B : Data Link Layer**

C : Application Layer

D : Physical Layer

**Q.no 18. In Bluetooth architecture of a piconet can have up to \_\_\_\_\_ stations**

A : 802.3

B : 802.11

C : 802.15

**D : 802.16**

**Q.no 19. HDLC protocol resides in \_\_\_ layer**

**A : Data Link Layer**

B : Application Layer

C : Transport Layer

D : Network Layer

**Q.no 20. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is Destination port number.**

**A : 000D**

B : CB84

C : 001C

D : 001D

**Q.no 21. In Inet Address class, which method returns the host name of the IP Address?**

**A : Public String get Hostname()**

B : Public String getHostAddress()

C : Public static InetAddress get Localhost()

D : Public getByName()

**Q.no 22. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends \_\_\_\_\_**

A : Packet which are not lost

**B : Only those packets which are lost or corrupted**

C : Packet from starting

D : All the packets

**Q.no 23. Size of TCP segment header ranges between \_\_\_\_\_**

A : 16 and 32 bytes

B : 16 and 32 bits

**C : 20 and 60 bytes**

D : 20 and 60 bits

**Q.no 24. Which of the following layers is an addition to OSI model when compared with TCP IP model?**

A : Application layer

B : Presentation layer

C : Session layer

**D : Session and Presentation layer**

**Q.no 25. A place where there is a field of signal through which you can access WiFi internet is called –**

**A : WiFi Hotspots**

B : WiFi Internet

C : WiFi Zone

D : WiFi Range

**Q.no 26. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

**D : 255.255.255.224**

**Q.no 27. In HDLC Normal transfer mode is used for \_\_\_\_\_**

A : only point to point links

B : only point to multipoint links

C : either point to point links or point to multipoint links

**D : both point to point and multipoint links**

**Q.no 28. Where should we use default routing?**

**A : On stub networks- which have only one exit path out of the network**

B : Which have more than one exit path out of the network

C : Minimum five exit paths out of the network

D : Maximum five exit paths out of the network

**Q.no 29. The size of flag field in HDLC frame is \_\_\_\_\_**

**A : 8 bits**

B : 4 bits

C : 2 bits

D : 9 bits

**Q.no 30. In the network HTTP resources are located by \_\_\_\_\_**

**A : Uniform resource identifier**

B : Unique resource locator

C : Unique resource identifier

D : Union resource locator

**Q.no 31. In the \_\_\_\_\_ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle**

A : nonpersistent

B : Pure Aloha

**C : CSMA with collision detection**

D : CSMA with collision avoidance

**Q.no 32. Which layer of the OSI model are host-to-host layer?**

A : Physical layer

**B : Network layer**

C : Datalink layer

D : Physical, Datalink, Network, Transport

**Q.no 33. The DHCP server \_\_\_\_\_**

A : maintains a database of available IP addresses

B : maintains the information about client configuration parameters

C : grants a IP address when receives a request from a client

**D : Maintains a database of IP address, information about client configuration and grants IP address**

**Q.no 34. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

**B : Contention window, Acknowledgment and Interframe space**

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 35. Which of the following fields in IPV4 datagram is not related to fragmentation?**

**A : Type of service**

B : Fragment offset

C : Flags

D : Identification

**Q.no 36. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

**A : FDM**

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 37. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is \_\_\_\_\_**

A : Mutual open

B : Mutual Close

**C : Simultaneous open**

D : Simultaneous close

**Q.no 38. Most dial-up access to Internet is accomplished by using \_\_\_\_\_**

A : TCP

**B : PPP**

C : IP

D : IPX

**Q.no 39. Standard ethernet use which topologies**

A : CSMA with collision avoidance

B : Pure Aloha

C : Slotted Aloha

**D : CSMA with collision detection**

**Q.no 40. The \_\_\_\_\_ field is used to detect errors over the entire user datagram.**

A : udp header

**B : checksum**

C : source port

D : destination port

**Q.no 41. Which one of the following algorithm is not used for congestion control?**

A : traffic aware routing

B : admission control

C : load shedding

D : routing information protocol

**Q.no 42.** \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 43.** In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 44.** When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_

A : computer network

B : distributed system

C : networking system

D : mail system

**Q.no 45.** Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_

A : 161

B : 123

C : 162

D : 124

**Q.no 46.** After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_

A : internet relay chat

B : broader gateway protocol

C : address resolution protocol

D : Internet Address Chat

**Q.no 47. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 48. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

B : physical layer

C : data link layer

D : transport layer

**Q.no 49. A 4 byte IP address consists of \_\_\_\_\_**

A : only network address

B : only host address

C : network address & host address

D : network address & MAC address

**Q.no 50. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

D : internet corporation for assigned names and numbers

**Q.no 51. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 52. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

**C : NRM**

D : ABM

**Q.no 53. Which is the correct expression for the length of UDP datagram?**

**A : UDP length = IP length – IP header's length**

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 54. Each frame in HDLC protocol may contain up \_\_ fields**

A : 4

B : 5

**C : 6**

D : 7

**Q.no 55. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

A : 000D

**B : CB84**

C : 001C

D : 001D

**Q.no 56. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all**

**stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

**C : 38 frames**

D : 156 frames

**Q.no 57. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

**B : 92 frames**

C : 38 frames

D : 156 frames

**Q.no 58. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

**B : Transmission control protocol**

C : Border gateway protocol

D : Domain host control protocol

**Q.no 59. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?**

A : HTTP

B : FTP

**C : Telnet**

D : TCP

**Q.no 60. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

**B : 8**

C : 4

D : 10

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**Answer for Question No 1. is b**

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**Answer for Question No 2. is a**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is d**

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**Answer for Question No 8. is c**

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**Answer for Question No 9. is d**

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**Answer for Question No 10. is a**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is a**

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**Answer for Question No 15. is d**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is d**

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**Answer for Question No 19. is a**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is a**

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**Answer for Question No 22. is b**

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**Answer for Question No 23. is c**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is c**

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**Answer for Question No 32. is b**

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**Answer for Question No 33. is d**

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**Answer for Question No 34. is b**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is a**

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**Answer for Question No 37. is c**

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**Answer for Question No 38. is b**

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**Answer for Question No 39. is d**

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**Answer for Question No 40. is b**

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**Answer for Question No 41. is d**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is a**

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**Answer for Question No 44. is b**

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**Answer for Question No 45. is b**

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**Answer for Question No 46. is c**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is c**

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**Answer for Question No 50. is d**

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**Answer for Question No 51. is a**

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**Answer for Question No 52. is c**

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**Answer for Question No 53. is a**

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**Answer for Question No 54. is c**

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**Answer for Question No 55. is b**

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**Answer for Question No 56. is c**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is b**

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**Answer for Question No 59. is c**

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**Answer for Question No 60. is b**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. In Bluetooth architecture of a piconet can have up to \_\_\_\_\_ stations**

A : 802.3

B : 802.11

C : 802.15

**D : 802.16**

**Q.no 2. The protocol which is used for defining the legal request and replies is called \_\_\_\_\_ .**

A : FTP

B : SMTP

C : TCP

**D : HTTP**

**Q.no 3. Which network topology requires a central controller or hub?**

A : Mesh

**B : Star**

C : Ring

D : Bus

**Q.no 4. AODV stands for**

**A : Ad hoc On-Demand Distance Vector**

B : Advance ondemand distance vector

C : Advance on distance vector

D : All of these

**Q.no 5. Which of the following is not the Networking Devices?**

A : Gateways

**B : Linux**

C : Routers

D : Firewalls

**Q.no 6. The term IPv4 stands for?**

**A : Internet Protocol Version 4**

B : Internet Programming Version 4

C : International Programming Version 4

D : International Protocol Version 4

**Q.no 7. DNS is the abbreviation of**

A : Dynamic Name System

B : Dynamic Network System

**C : Domain Name System**

D : Domain Network Service

**Q.no 8. Stream Control Transmission Protocol (SCTP) is a new \_\_\_\_\_ protocol.**

A : reliable, character-oriented

**B : reliable, message-oriented**

C : unreliable, message-oriented

D : unreliable, byte-oriented

**Q.no 9. In point to point protocol \_\_\_\_\_ field of PPP Frame carries the user data.**

A : flag

**B : payload**

C : Protocol

D : FCS

**Q.no 10. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

**C : 802.3 u**

D : 802.11

**Q.no 11. WiMAX stands for \_\_\_\_\_**

A : Data Link

B : Network

C : Physical

D : Transport

**Q.no 12. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_**

A : Socket

B : IP Address

**C : Protocol**

D : MAC Address

**Q.no 13. The address resolution protocol (ARP) is used for**

- A : Finding the IP address from the DNS
- B : Finding the IP address of the default gateway
- C : Finding the IP address that corresponds to a MAC address
- D : Finding the MAC address that corresponds to an IP address**

**Q.no 14. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

- A : Class B
- B : Class c
- C : Forwarder**
- D : Class D

**Q.no 15. Which of the following is false with respect to UDP?**

- A : Connection-oriented**
- B : Unreliable
- C : Transport layer protocol
- D : Low overhead

**Q.no 16. How does a DHCP server dynamically assign IP address to host?**

- A : Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.
- B : Addresses are assigned for a fixed period of time. At the end of period, a new quest for an address must be made, and another address is then assigned.
- C : Addresses are leased to host. A host will usually keep the same address by periodically contacting the DHCP sever to renew the lease.**
- D : Addresses are permanently assigned so that the host uses the same address at all times.

**Q.no 17. \_\_\_\_\_ protocol has no flow or error control.**

- A : simplex**
- B : complex

C : duplex

D : half duplex

**Q.no 18. RTP provides the facility of jitter \_\_\_\_\_**

A : media stream

B : expansion

C : media modification

D : security

**Q.no 19. When the mail server sends mail to other mail servers it becomes \_\_\_\_\_**

A : SMTP server

B : SMTP client

C : Peer

D : Master

**Q.no 20. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_\_\_\_**

A : bits

B : byes

C : megabytes

D : megabits

**Q.no 21. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

C : Stop-and-Wait Protocol

D : Stop Protocol

**Q.no 22. The network layer is concerned with \_\_\_\_\_ of data.**

A : Bits

B : Frames

C : Packets

D : Bytes

**Q.no 23. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

C : Determines on which outgoing link a packet is to be forwarded

D : Forwards a packet to all outgoing links except the originated link

**Q.no 24. In FTP protocol, client contacts server using \_\_\_\_ as the transport protocol.**

A : transmission control protocol

B : user datagram protocol

C : datagram congestion control protocol

D : stream control transmission protocol

**Q.no 25. The \_\_\_\_\_ field is used to detect errors over the entire user datagram.**

A : udp header

B : checksum

C : source port

D : destination port

**Q.no 26. Which Strategies used by CSMA with collision avoidance**

A : 1500 bytes , 46 bytes

B : 46 bytes, 1500 bytes

C : 64 bytes, 1518 bytes

D : 512 bits, 12144 bytes

**Q.no 27. Most dial-up access to Internet is accomplished by using \_\_\_\_**

A : TCP

B : PPP

C : IP

D : IPX

**Q.no 28. The meaning of Straight-through Cable is**

A : Four wire pairs connect to the same pin on each end

B : The cable Which Directly connects Computer to Computer

C : Four wire pairs not twisted with each other

D : The cable which is not twisted

**Q.no 29. Which of following provides reliable communication?**

A : TCP

B : IP

C : UDP

D : All of the above

**Q.no 30. Which of the following fields in IPV4 datagram is not related to fragmentation?**

A : Type of service

B : Fragment offset

C : Flags

D : Identification

**Q.no 31. The Maximum length of 1000BaseSX is**

A : Ring topology

B : Bus topology

C : Star topology

D : Mesh topology

**Q.no 32. In Stop-And-Wait ARQ, sequence numbers are based on \_\_\_\_ arithmetic.**

A : modulo-2

B : modulo-4

C : modulo-8

D : modulo-n

**Q.no 33. Router operates in which layer of OSI Reference Model?**

A : Layer 1 (Physical Layer)

**B : Layer 3 (Network Layer)**

C : Layer 4 (Transport Layer)

D : Layer 7 (Application Layer)

**Q.no 34. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

**D : Protocol**

**Q.no 35. IEEE has defined the specifications for a wireless LAN called, \_\_\_\_\_ which covers the physical and data link layers**

**A : 550 m**

B : 25 m

C : 5000 m

D : 100 m

**Q.no 36. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

**B : Contention window, Acknowledgment and Interframe space**

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 37. The size of flag field in HDLC frame is \_\_\_\_\_**

A : 8 bits

B : 4 bits

C : 2 bits

D : 9 bits

**Q.no 38. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

A : FDM

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 39. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 40. ICMP is primarily used for \_\_\_\_\_**

A : error and diagnostic functions

B : addressing

C : forwarding

D : routing

**Q.no 41. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 42. Which of the following statements is TRUE about CSMA with collision detection**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 43. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

D : Byte stuffing

**Q.no 44. Define the type of the following destination MAC address**

**4A:30:10:21:10:1A**

A : IEEE 802.11 wireless LAN runs CSMA with collision detection protocol

B : Ethernet is not based on CSMA with collision detection protocol

C : CSMA with collision detection is not suitable for a high propagation delay network like satellite network

D : There is no contention in a CSMA with collision detection network

**Q.no 45. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

C : address resolution protocol

D : Internet Address Chat

**Q.no 46. The \_\_\_\_\_ Protocol, adds a simple error control mechanism to the \_\_\_\_\_ Protocol.**

A : Selective Repeat ARQ; Go-Back-N ARQ

B : Go-Back-N ARQ; Stop-and-Wait

C : Stop-and-Wait ARQ; Go-Back-N ARQ

D : Stop-and-Wait ARQ; Stop-and-Wait

**Q.no 47. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps What is the requirement to make this frame collision free**

A : multicast address

B : Broadcast address

C : Unicast address

D : Anycast address

**Q.no 48. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 49. In HDLC which frames are used only to transport control information?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 50. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

D : Acknowledgment

**Q.no 51. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 52. The port number is “ephemeral port number”, if the source host is \_\_\_\_\_**

A : NTP

B : Echo

C : Server

D : Client

**Q.no 53. a character-oriented approach and a bit-oriented approaches used in which type of framing?**

A : fixed size

B : zero size

C : variable-size

D : cells

**Q.no 54. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 55. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 1000 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

D : 151 frames

**Q.no 56. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

**B : Transmission control protocol**

C : Border gateway protocol

D : Domain host control protocol

**Q.no 57. Three types of HDLC frames are :**

A : Data frames, Supervisory frames, Un-numbered frames

**B : Information frames, Supervisory frames, Un-numbered frames**

C : Information frames, Supervisory frames, Numbered frames

D : Information frames, Controlled frames, Numbered frames

**Q.no 58. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?**

A : HTTP

B : FTP

**C : Telnet**

D : TCP

**Q.no 59. IPv6 does not support which of the following addressing modes?**

A : unicast addressing

B : multicast addressing

**C : broadcast addressing**

D : anycast addressing

**Q.no 60. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

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**Answer for Question No 1. is d**

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**Answer for Question No 2. is d**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is a**

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**Answer for Question No 7. is c**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is b**

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**Answer for Question No 10. is c**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is d**

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**Answer for Question No 14. is c**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is c**

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**Answer for Question No 17. is a**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is c**

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**Answer for Question No 22. is c**

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**Answer for Question No 23. is c**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is b**

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**Answer for Question No 26. is b**

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**Answer for Question No 27. is b**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is c**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is a**

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**Answer for Question No 38. is a**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is a**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is d**

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**Answer for Question No 44. is c**

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**Answer for Question No 45. is c**

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**Answer for Question No 46. is d**

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**Answer for Question No 47. is c**

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**Answer for Question No 48. is d**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is d**

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**Answer for Question No 51. is a**

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**Answer for Question No 52. is d**

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**Answer for Question No 53. is c**

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**Answer for Question No 54. is d**

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**Answer for Question No 55. is b**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is c**

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**Answer for Question No 59. is c**

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**Answer for Question No 60. is b**

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Seat No -

Total number of questions : 60

### 12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
- 3) Use of calculator is allowed.
- 4) Each question carries 1 Mark.
- 5) Specially abled students are allowed 20 minutes extra for examination.
- 6) Do not use pencils to darken answer.
- 7) Use only black/blue ball point pen to darken the appropriate circle.
- 8) No change will be allowed once the answer is marked on OMR Sheet.
- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

#### **Q.no 1. OSPF stands for**

A : Open short distance protocol

B : on demand sequence protocol

**C : Open shortest path first**

D : Open sequence protocol first

#### **Q.no 2. FTP server listens for connection on port number \_\_\_\_\_**

A : 20

**B : 21**

C : 22

D : 23

#### **Q.no 3. A \_\_\_ error means that 2 or more bits in the data unit have changed.**

A : unibit

B : burst

C : channel

D : noisy

**Q.no 4. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 5. Which one of the following protocol delivers/stores mail to receiver server?**

A : simple mail transfer protocol

B : post office protocol

C : internet mail access protocol

D : hypertext transfer protocol

**Q.no 6. The protocol which is used for defining the legal request and replies is called \_\_\_\_\_ .**

A : FTP

B : SMTP

C : TCP

D : HTTP

**Q.no 7. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is Destination port number.**

A : 000D

B : CB84

C : 001C

D : 001D

**Q.no 8. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

A : standard

**B : fixed-size**

C : variable-size

D : character

**Q.no 9. Stream Control Transmission Protocol (SCTP) is a new \_\_\_\_\_ protocol.**

A : reliable, character-oriented

**B : reliable, message-oriented**

C : unreliable, message-oriented

D : unreliable, byte-oriented

**Q.no 10. BGP stands for**

A : Bypass gateway protocol

**B : Border gateway protocol**

C : Bootstrap Protocol

D : Boundary gateway protocol

**Q.no 11. CSMA is based on the principle of**

A : p persistent

**B : nonpersistent**

C : 1 persistent

D : Persistent

**Q.no 12. DNS is the abbreviation of**

A : Dynamic Name System

B : Dynamic Network System

**C : Domain Name System**

D : Domain Network Service

**Q.no 13. Which protocol provides the synchronization between media streams?**

A : RTP

**B : RTCP**

C : RPC

D : RTCT

**Q.no 14. Which type of network is used for small geographical area such as in a one building?**

A : WLAN

B : MAN

**C : LAN**

D : WAN

**Q.no 15. A local telephone network is an example of a \_\_\_\_\_ network.**

A : Packet switched

**B : Circuit switched**

C : Bit switched

D : Line switched

**Q.no 16. \_\_\_\_\_. Is the process of placing timestamps on dynamically registered records**

**A : Aging**

B : IP

C : AIPAA

D : tcp

**Q.no 17. In Active mode FTP, the client initiates both the control and data connections.**

A : true

**B : false**

C : None

D : Can not predict

**Q.no 18. \_\_\_\_\_ is used in dealing with error detection and error correction**

A : Samming distance

**B : Hamming distance**

C : Tamming distance

D : Spamming distance

**Q.no 19. Which network topology requires a central controller or hub?**

A : Mesh

**B : Star**

C : Ring

D : Bus

**Q.no 20. Data communication system within a building or campus is\_\_\_\_\_**

**A : LAN**

B : WAN

C : MAN

D : PAN

**Q.no 21. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client.**

**A : IP address**

B : MAC Address

C : Port Address

D : Physical Address

**Q.no 22. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

**A : sliding window**

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 23. What is the maximum data rate for the 802.11g standard**

A : 10 to 15 percent

**B : 5 to 10 percent**

C : 0 to 5 percent

D : 15 to 20 percent

**Q.no 24. Which protocol gives a full route table update every 30 seconds?**

A : IEGRP

**B : RIP**

C : ICMP

D : IP

**Q.no 25. In \_\_\_\_\_ systems, resources are allocated on demand.**

**A : packet switching**

B : circuit switching

C : line switching

D : frequency switching

**Q.no 26. What is the meaning of Bandwidth in Network?**

**A : Transmission capacity of a communication channels**

B : Connected Computers in the Network

C : Class of IP used in Network

D : Bit per Seconds

**Q.no 27. Standard ethernet use which topologies**

A : CSMA with collision avoidance

B : Pure Aloha

C : Slotted Aloha

D : CSMA with collision detection

**Q.no 28. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

**D : Protocol**

**Q.no 29. In \_\_ protocol, if no acknowledgement for the sent frame has arrived to the sender, it resends all the outstanding frames.**

A : stop and wait

**B : go-Back-N ARQ**

C : simplest

D : selective repeat ARQ

**Q.no 30. Which classes are used for connection-less socket programming?**

A : Datagram Socket

B : Datagram Packet

**C : Both Datagram Socket & Datagram Packet**

D : Server Socket

**Q.no 31. In FTP protocol, client contacts server using \_\_ as the transport protocol.**

**A : transmission control protocol**

B : user datagram protocol

C : datagram congestion control protocol

D : stream control transmission protocol

**Q.no 32. What is the size of MAC Address?**

A : 16-bits

B : 32-bits

C : 48-bits

D : 64-bits

**Q.no 33. ICMP is primarily used for \_\_\_\_\_**

A : error and diagnostic functions

B : addressing

C : forwarding

D : routing

**Q.no 34. In CSMA the Vulnerable time is**

A : 38 percent

B : 36 percent

C : 34 percent

D : 37 percent

**Q.no 35. In SMTP, the command to write receiver's mail address is written with the command \_\_\_\_\_**

A : SEND TO

B : RCPT TO

C : MAIL TO

D : RCVR TO

**Q.no 36. In the network HTTP resources are located by**

A : uniform resource identifier

B : unique resource locator

C : unique resource identifier

D : union resource locator

**Q.no 37. The \_\_\_\_\_ field is used to detect errors over the entire user datagram.**

A : udp header

B : checksum

C : source port

D : destination port

**Q.no 38. There are \_\_ types of HDLC frames**

A : 2

B : 4

C : 5

**D : 3**

**Q.no 39. Repeater operates in which layer of the OSI model?**

**A : Physical layer**

B : Data link layer

C : Network layer

D : Transport layer

**Q.no 40. In Inet Address class, which method returns the host name of the IP Address?**

**A : Public String get Hostname()**

B : Public String getHostAddress()

C : Public static InetAddress get Localhost()

D : Public getByName()

**Q.no 41. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

**D : HTTP is a request and response protocol**

**Q.no 42. The port number is “ephemeral port number”, if the source host is \_\_\_\_\_**

A : NTP

B : Echo

C : Server

D : Client

**Q.no 43. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 250 frames per second**

A : 92 frames

B : 368 frames

C : 49 frames

D : 151 frames

**Q.no 44. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 45. Which of the following statements is TRUE about CSMA with collision detection**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 46. Three types of HDLC frames are :**

A : Data frames, Supervisory frames, Un-numbered frames

B : Information frames, Supervisory frames, Un-numbered frames

C : Information frames, Supervisory frames, Numbered frames

D : Information frames, Controlled frames, Numbered frames

**Q.no 47. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

B : 8

C : 4

D : 10

**Q.no 48. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

A : 000D

B : CB84

C : 001C

D : 001D

**Q.no 49. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

C : NRM

D : ABM

**Q.no 50. MIME uses the same \_\_\_\_\_ format**

A : RFC822

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 51. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

B : physical layer

C : data link layer

D : transport layer

**Q.no 52. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

**B : an SMTP extension**

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 53. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

**A : Added**

B : Removed

C : Rearranged

D : Modified

**Q.no 54. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

**D : Session layer**

**Q.no 55. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

**C : 38 frames**

D : 156 frames

**Q.no 56. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

B : distributed system

C : networking system

D : mail system

**Q.no 57. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

**B : Transmission control protocol**

C : Border gateway protocol

D : Domain host control protocol

**Q.no 58. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

**B : 10001**

C : 12001

D : 11001

**Q.no 59. Network congestion occurs \_\_\_\_\_**

**A : in case of traffic overloading**

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 60. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

**A : Point - to - Point Protocol (PPP)**

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

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**Answer for Question No 1. is c**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is c**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is d**

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**Answer for Question No 7. is a**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is b**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is c**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is a**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is b**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is a**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is d**

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**Answer for Question No 29. is b**

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**Answer for Question No 30. is c**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is c**

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**Answer for Question No 33. is a**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is b**

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**Answer for Question No 36. is a**

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**Answer for Question No 37. is b**

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**Answer for Question No 38. is d**

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**Answer for Question No 39. is a**

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**Answer for Question No 40. is a**

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**Answer for Question No 41. is d**

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**Answer for Question No 42. is d**

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**Answer for Question No 43. is c**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is b**

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**Answer for Question No 47. is b**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is c**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is b**

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**Answer for Question No 53. is a**

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**Answer for Question No 54. is d**

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**Answer for Question No 55. is c**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is b**

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**Answer for Question No 59. is a**

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**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
  - 2) Attempt any 50 questions out of 60.
  - 3) Use of calculator is allowed.
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  - 8) No change will be allowed once the answer is marked on OMR Sheet.
  - 9) Rough work shall not be done on OMR sheet or on question paper.
  - 10) Darken ONLY ONE CIRCLE for each answer.
- 

**Q.no 1. Ipv6 is how many bits long**

A : 32

B : 48

**C : 128**

D : 16

**Q.no 2. A local telephone network is an example of a \_\_\_\_\_ network.**

A : Packet switched

**B : Circuit switched**

C : Bit switched

D : Line switched

**Q.no 3. Data communication system within a building or campus is\_\_\_\_\_**

A : LAN

B : WAN

C : MAN

D : PAN

**Q.no 4. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 5. Application layer protocol defines \_\_\_\_\_**

A : types of messages exchanged

B : message unformatted

C : Message Request and Response

D : Message Syntax and Semantics

**Q.no 6. CSMA is based on the principle of**

A : p persistent

B : nonpersistent

C : 1 persistent

D : Persistent

**Q.no 7. The \_\_\_\_\_ layer of ethernet consist of LLC sublayer and MAC sublayer**

A : Maximum Propagation time  $T_p$

B : Transmission time

C : Back off Time

D : Wait time out time

**Q.no 8. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_ can access the network.**

A : MAC Address

B : IP Address

C : MAC and IP address

D : MAC or IP address

**Q.no 9. The Maximum throughput for pure aloha is \_\_\_ percent**

A : CSMA with collision detection

B : CSMA with collision avoidance

C : Pure Aloha

D : Slotted Aloha

**Q.no 10. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 11. \_\_\_\_\_ topology requires a multipoint connection.**

A : Star

B : Mesh

C : Ring

D : Bus

**Q.no 12. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_\_**

A : bits

B : byes

C : megabytes

D : megabits

**Q.no 13. AODV stands for**

A : Ad hoc On-Demand Distance Vector

B : Advance ondemand distance vector

C : Advance on distance vector

D : All of these

**Q.no 14. The control information in SCTP is included in the \_\_\_\_\_**

A : header control field

**B : control chunks**

C : data chunks

D : Trailer Control field

**Q.no 15. In Bluetooth architecture of a piconet can have up to \_\_\_\_\_ stations**

A : 802.3

B : 802.11

C : 802.15

**D : 802.16**

**Q.no 16. The correction of errors is \_\_\_\_\_ the detection.**

**A : more difficult than**

B : easier

C : similar

D : None of the above

**Q.no 17. How many layers are in the TCP/IP model?**

A : 4 layers

**B : 5 layers**

C : 6 layers

D : 7 layers

**Q.no 18. which Displays entries in DNS cache**

A : ipconfig /displaydns

B : ipconfig /flushdns

C : Normal DHCP Scope

D : ipconfig /registerdns

**Q.no 19. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

D : Routes to use for forwarding data to its destination

**Q.no 20. A simple protocol used for fetching email from a mail box is**

A : POP3

B : IMAP

C : SMTP

D : POP2

**Q.no 21. Which of the following is not a congestion policy at network layer?**

A : Flow Control Policy

B : Packet Discard Policy

C : Packet Lifetime Management Policy

D : Routing Algorithm

**Q.no 22. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?**

A : SRTP

B : RTCP

C : RCP

D : RTCT

**Q.no 23. In HDLC Normal transfer mode is used for \_\_\_\_\_**

A : only point to point links

B : only point to multipoint links

C : either point to point links or point to multipoint links

**D : both point to point and multipoint links**

**Q.no 24. Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?**

A : Star

B : Router

C : Bus

D : LAN

**Q.no 25. The maximum length (in bytes) of an IPv4 datagram is?**

A : 32

B : 1024

**C : 65535**

D : 512

**Q.no 26. Which LAN Protocols are designed for Fast Ethernet to compete**

A : Bus and Ring

**B : Bus and Star**

C : Ring and Tree

D : Ring and Mesh

**Q.no 27. Size of TCP segment header ranges between \_\_\_\_\_**

A : 16 and 32 bytes

B : 16 and 32 bits

**C : 20 and 60 bytes**

D : 20 and 60 bits

**Q.no 28. What is the use of Bridge in Network?**

A : to connect LANs

B : to separate LANs

C : to control Network Speed

D : to connect LAN to WAN

**Q.no 29. ARQ stands for \_\_\_\_\_**

A : Automatic repeat request

B : Automatic repeat quantization

C : Acknowledgement repeat request

D : Automatic resend request

**Q.no 30. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

C : resource reservation protocol

D : session initiation protocol

**Q.no 31. Which classes are used for connection-less socket programming?**

A : Datagram Socket

B : Datagram Packet

C : Both Datagram Socket & Datagram Packet

D : Server Socket

**Q.no 32. What is routing algorithm used by OSPF routing protocol?**

A : Distance vector

B : Flooding

C : Path vector

D : Link state

**Q.no 33. SSH uses \_\_\_\_\_ to authenticate the remote computer.**

A : public-key cryptography

B : private-key cryptography

C : any of public-key or private-key

D : both public-key & private-key

**Q.no 34. IEEE has defined the specifications for a wireless LAN called, \_\_\_\_\_ which covers the physical and data link layers**

A : 550 m

B : 25 m

C : 5000 m

D : 100 m

**Q.no 35. In Inet Address class, which method returns the host name of the IP Address?**

A : Public String get Hostname()

B : Public String getHostAddress()

C : Public static InetAddress get Localhost()

D : Public getByName()

**Q.no 36. What is the frequency range of IEEE 802.11a standard**

A : 6Mbps

B : 11Mbps

C : 22Mbps

D : 54Mbps

**Q.no 37. In sliding window protocol, the send window can slide one or more slots when valid \_\_\_\_\_ arrives.**

A : bit

B : request

C : flag

D : acknowledgement

**Q.no 38. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

**D : Protocol**

**Q.no 39. Which Strategies used by CSMA with collision avoidance**

A : 1500 bytes , 46 bytes

**B : 46 bytes, 1500 bytes**

C : 64 bytes, 1518 bytes

D : 512 bits, 12144 bytes

**Q.no 40. What is DHCP snooping?**

**A : techniques applied to ensure the security of an existing DHCP infrastructure**

B : algorithm for DHCP

C : encryption of the DHCP server requests

D : decryption of the DHCP server requests

**Q.no 41. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

**A : each station can send both commands and respond to commands**

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 42. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

**D : Acknowledgment**

**Q.no 43. IPv6 does not support which of the following addressing modes?**

- A : unicast addressing
- B : multicast addressing
- C : broadcast addressing**
- D : anycast addressing

**Q.no 44. The process of modifying IP address information in IP packet headers while in transit across a traffic routing device is called**

- A : Port address translation (PAT)
- B : Network address translation (NAT)**
- C : Address mapping
- D : Port mapping

**Q.no 45. A 4 byte IP address consists of \_\_\_\_\_**

- A : only network address
- B : only host address
- C : network address & host address**
- D : network address & MAC address

**Q.no 46. Which one of the following algorithm is not used for congestion control?**

- A : traffic aware routing
- B : admission control
- C : load shedding
- D : routing information protocol**

**Q.no 47. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

- A : PAP
- B : CHAP

C : SAP

D : LCP

**Q.no 48. MIME uses the same \_\_\_\_\_ format**

A : RFC822

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 49. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 50. Each frame in HDLC protocol may contain up \_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 51. In HTTP pipelining \_\_\_\_\_**

A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

**Q.no 52. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 53. Byte stuffing means adding a special byte to the data section of the frame when there is a character with the same pattern as the \_\_\_\_\_.**

A : trailer

B : header

C : payload

D : flag

**Q.no 54. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

D : 151 frames

**Q.no 55. HDLC supports two types of transfer modes \_\_\_\_\_ and \_\_\_\_\_**

A : normal response mode and abnormal response mode.

B : normal response mode and asynchronous balanced mode.

C : command mode and respond mode

D : synchronous balanced mode and asynchronous balanced mode.

**Q.no 56. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 57. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 58. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

D : 128.64.0.0

**Q.no 59. Peer-to-peer processes are processes on two or more devices communicating at a**

A : same layer

B : different layer

C : different layer on different device

D : none of above

**Q.no 60. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

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**Answer for Question No 1. is c**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is a**

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**Answer for Question No 4. is d**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is b**

---

**Answer for Question No 7. is a**

---

**Answer for Question No 8. is c**

---

**Answer for Question No 9. is b**

---

**Answer for Question No 10. is c**

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**Answer for Question No 11. is d**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is d**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is a**

---

**Answer for Question No 19. is d**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is a**

---

**Answer for Question No 22. is a**

---

**Answer for Question No 23. is d**

---

**Answer for Question No 24. is a**

---

**Answer for Question No 25. is c**

---

**Answer for Question No 26. is b**

---

**Answer for Question No 27. is c**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is c**

---

**Answer for Question No 31. is c**

---

**Answer for Question No 32. is d**

---

**Answer for Question No 33. is a**

---

**Answer for Question No 34. is a**

---

**Answer for Question No 35. is a**

---

**Answer for Question No 36. is d**

---

**Answer for Question No 37. is d**

---

**Answer for Question No 38. is d**

---

**Answer for Question No 39. is b**

---

**Answer for Question No 40. is a**

---

**Answer for Question No 41. is a**

---

**Answer for Question No 42. is d**

---

**Answer for Question No 43. is c**

---

**Answer for Question No 44. is b**

---

**Answer for Question No 45. is c**

---

**Answer for Question No 46. is d**

---

**Answer for Question No 47. is d**

---

**Answer for Question No 48. is a**

---

**Answer for Question No 49. is b**

---

**Answer for Question No 50. is c**

---

**Answer for Question No 51. is a**

---

**Answer for Question No 52. is c**

---

**Answer for Question No 53. is d**

---

**Answer for Question No 54. is d**

---

**Answer for Question No 55. is b**

---

**Answer for Question No 56. is a**

---

**Answer for Question No 57. is d**

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**Answer for Question No 58. is d**

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**Answer for Question No 59. is a**

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**Answer for Question No 60. is b**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. The network layer protocol for internet is \_\_\_\_\_**

A : ethernet

**B : Internet protocol**

C : hypertext transfer protocol

D : file transfer protocol

**Q.no 2. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_**

**A : bits**

B : byes

C : megabytes

D : megabits

**Q.no 3. ICMP stands for**

A : Internet Control Message Protocol

B : Internet Control Management Protocol

C : Internal Control Manage Protocol

D : Internet Count Management Protocol

**Q.no 4. IEEE created Fast Ethernet under the name \_\_\_\_\_**

A : 10Base 5

**B : 10Base 2**

C : 10Base T

D : 10Base F

**Q.no 5. \_\_\_\_\_ protocol has neither flow control nor error control**

A : stop and wait

**B : simplest**

C : easiest

D : ARQ

**Q.no 6. In pure Aloha, the vulnerable time is \_\_\_\_\_ the frame transmission time**

A : 10

**B : 15**

C : 16

D : 17

**Q.no 7. What is the purpose of the DHCP server?**

A : to provide storage for email

B : to translate URLs to IP addresses

C : to translate IPv4 addresses to MAC addresses

**D : to provide an IP configuration information to hosts**

**Q.no 8. Which methods are commonly used in Server Socket class?**

A : Public Output Stream get Output Stream ()

B : Public Socket accept ()

C : Public synchronized void close ()

D : Public void connect ()

**Q.no 9. Which topology allow to connect computers including server in a ring?**

A : Star

B : Tree

C : Ring

D : LAN

**Q.no 10. \_\_\_\_\_is used in dealing with error detection and error correction**

A : Samming distance

B : Hamming distance

C : Tamming distance

D : Spamming distance

**Q.no 11. Which of the following is false with respect to UDP?**

A : Connection-oriented

B : Unreliable

C : Transport layer protocol

D : Low overhead

**Q.no 12. A simple protocol used for fetching email from a mail box is**

A : POP3

B : IMAP

C : SMTP

D : POP2

**Q.no 13. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

**D : Routes to use for forwarding data to its destination**

**Q.no 14. Which one of the following protocol delivers/stores mail to receiver server?**

A : simple mail transfer protocol

B : post office protocol

C : internet mail access protocol

D : hypertext transfer protocol

**Q.no 15. Which type of network is used for small geographical area such as in a one building?**

A : WLAN

B : MAN

**C : LAN**

D : WAN

**Q.no 16. Data communication system spanning states, countries, or the whole world is \_\_\_\_\_**

A : LAN

**B : WAN**

C : MAN

D : PAN

**Q.no 17. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

**B : IP**

C : Physical

D : Subnet Mask

**Q.no 18. \_\_\_\_\_ protocol has no flow or error control.**

A : simplex

B : complex

C : duplex

D : half duplex

**Q.no 19. The \_\_\_\_\_ layer of ethernet consist of LLC sublayer and MAC sublayer**

A : Maximum Propagation time T<sub>p</sub>

B : Transmission time

C : Back off Time

D : Wait time out time

**Q.no 20. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as \_\_\_\_\_**

A : Flow control

B : Error control

C : Congestion control

D : Error detection

**Q.no 21. In sliding window protocol, the send window can slide one or more slots when valid \_\_\_\_\_ arrives.**

A : bit

B : request

C : flag

D : acknowledgement

**Q.no 22. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

B : Contention window, Acknowledgment and Interframe space

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 23. Which protocol gives a full route table update every 30 seconds?**

A : IEGRP

**B : RIP**

C : ICMP

D : IP

**Q.no 24. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client.**

**A : IP address**

B : MAC Address

C : Port Address

D : Physical Address

**Q.no 25. In Stop-and-Wait ARQ~the acknowledgment number always announces in \_\_\_\_\_ arithmetic the sequence number of the next frame expected**

**A : modulo-2**

B : modulo-4

C : modulo-8

D : modulo-n

**Q.no 26. In \_\_\_\_\_ systems, resources are allocated on demand.**

**A : packet switching**

B : circuit switching

C : line switching

D : frequency switching

**Q.no 27. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

C : Stop-and-Wait Protocol

D : Stop Protocol

**Q.no 28. Radio channels are attractive medium because**

A : Can penetrate walls

B : Connectivity can be given to mobile user

C : Can carry signals for long distance

D : All of the mentioned

**Q.no 29. SSH uses \_\_\_\_\_ to authenticate the remote computer.**

A : public-key cryptography

B : private-key cryptography

C : any of public-key or private-key

D : both public-key & private-key

**Q.no 30. In TDM, slots are further divided into \_\_\_\_\_**

A : Seconds

B : Frames

C : Packets

D : Bits

**Q.no 31. MANET stands for**

A : Wireless ad hoc network

B : Mobile ad hoc network

C : Multiple ad hoc network

D : Multi advance network

**Q.no 32. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 33. ICMP is primarily used for \_\_\_\_\_**

A : error and diagnostic functions

B : addressing

C : forwarding

D : routing

**Q.no 34. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

D : Packet switching and Circuit switching

**Q.no 35. In SMTP, the command to write receiver's mail address is written with the command \_\_\_\_\_**

A : SEND TO

B : RCPT TO

C : MAIL TO

D : RCVR TO

**Q.no 36. The data link layer pack bits into \_\_\_\_.**

A : segments

B : clusters

C : packets

D : frames

**Q.no 37. How many different type of server exist?**

A : Only one

B : Two

C : Three

D : Four

**Q.no 38. Which LAN Protocols are designed for Fast Ethernet to compete**

A : Bus and Ring

B : Bus and Star

C : Ring and Tree

D : Ring and Mesh

**Q.no 39. What is DHCP snooping?**

A : techniques applied to ensure the security of an existing DHCP infrastructure

B : algorithm for DHCP

C : encryption of the DHCP server requests

D : decryption of the DHCP server requests

**Q.no 40. Which of the following layers is an addition to OSI model when compared with TCP IP model?**

A : Application layer

B : Presentation layer

C : Session layer

D : Session and Presentation layer

**Q.no 41. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

B : Transmission control protocol

C : Border gateway protocol

D : Domain host control protocol

**Q.no 42. Beyond IP, UDP provides additional services such as \_\_\_\_\_**

- A : Routing and switching
- B : Sending and receiving of packets
- C : Multiplexing and demultiplexing
- D : Demultiplexing and error checking**

**Q.no 43. In HDLC which frames are used only to transport control information?**

- A : S-Frames**
- B : I-Frames
- C : V-frames
- D : U-Frame

**Q.no 44. Transmission data rate is decided by \_\_\_\_\_**

- A : network layer
- B : physical layer**
- C : data link layer
- D : transport layer

**Q.no 45. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

- A : PAP
- B : CHAP
- C : SAP
- D : LCP**

**Q.no 46. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

- A : ARM
- B : ABM**
- C : NBM

D : NRM

**Q.no 47. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 250 frames per second**

A : 92 frames

B : 368 frames

C : 49 frames

D : 151 frames

**Q.no 48. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

B : 10001

C : 12001

D : 11001

**Q.no 49. In the IPv4 addressing format, the number of networks allowed under Class C addresses is**

A : 2 rest to 14

B : 2 rest to 7

C : 2 rest to 21

D : 2 rest to 24

**Q.no 50. The \_\_\_\_\_ Protocol, adds a simple error control mechanism to the \_\_\_\_\_ Protocol.**

A : Selective Repeat ARQ; Go-Back-N ARQ

B : Go-Back-N ARQ; Stop-and-Wait

C : Stop-and-Wait ARQ; Go-Back-N ARQ

D : Stop-and-Wait ARQ; Stop-and-Wait

**Q.no 51. The process of modifying IP address information in IP packet headers while in transit across a traffic routing device is called**

A : Port address translation (PAT)

**B : Network address translation (NAT)**

C : Address mapping

D : Port mapping

**Q.no 52. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

**B : distributed system**

C : networking system

D : mail system

**Q.no 53. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

A : 000D

**B : CB84**

C : 001C

D : 001D

**Q.no 54. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

**A : Point - to - Point Protocol (PPP)**

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 55. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

**B : 8**

C : 4

D : 10

**Q.no 56. Which is the correct expression for the length of UDP datagram?**

A : UDP length = IP length – IP header's length

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 57. The values GET, POST, HEAD etc are specified in \_\_\_\_\_ of HTTP message**

A : Request line

B : Header line

C : Status line

D : Entity body

**Q.no 58. \_\_\_ refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.**

A : Flow control

B : Speed control

C : Error control

D : Data control

**Q.no 59. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for \_\_\_ channels.**

A : signal

B : wireless

C : noisy

D : noiseless

**Q.no 60. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps What is the requirement to make this frame collision free**

A : multicast address

B : Broadcast address

C : Unicast address

D : Anycast address

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**Answer for Question No 1. is b**

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**Answer for Question No 2. is a**

---

**Answer for Question No 3. is a**

---

**Answer for Question No 4. is c**

---

**Answer for Question No 5. is b**

---

**Answer for Question No 6. is b**

---

**Answer for Question No 7. is d**

---

**Answer for Question No 8. is b**

---

**Answer for Question No 9. is c**

---

**Answer for Question No 10. is b**

---

**Answer for Question No 11. is a**

---

**Answer for Question No 12. is a**

---

**Answer for Question No 13. is d**

---

**Answer for Question No 14. is a**

---

**Answer for Question No 15. is c**

---

**Answer for Question No 16. is b**

---

**Answer for Question No 17. is b**

---

**Answer for Question No 18. is a**

---

**Answer for Question No 19. is a**

---

**Answer for Question No 20. is a**

---

**Answer for Question No 21. is d**

---

**Answer for Question No 22. is b**

---

**Answer for Question No 23. is b**

---

**Answer for Question No 24. is a**

---

**Answer for Question No 25. is a**

---

**Answer for Question No 26. is a**

---

**Answer for Question No 27. is c**

---

**Answer for Question No 28. is d**

---

**Answer for Question No 29. is a**

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**Answer for Question No 30. is b**

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**Answer for Question No 31. is b**

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**Answer for Question No 32. is b**

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**Answer for Question No 33. is a**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is b**

---

**Answer for Question No 36. is d**

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**Answer for Question No 37. is d**

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**Answer for Question No 38. is b**

---

**Answer for Question No 39. is a**

---

**Answer for Question No 40. is d**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is d**

---

**Answer for Question No 43. is a**

---

**Answer for Question No 44. is b**

---

**Answer for Question No 45. is d**

---

**Answer for Question No 46. is b**

---

**Answer for Question No 47. is c**

---

**Answer for Question No 48. is b**

---

**Answer for Question No 49. is c**

---

**Answer for Question No 50. is d**

---

**Answer for Question No 51. is b**

---

**Answer for Question No 52. is b**

---

**Answer for Question No 53. is b**

---

**Answer for Question No 54. is a**

---

**Answer for Question No 55. is b**

---

**Answer for Question No 56. is a**

---

**Answer for Question No 57. is a**

---

**Answer for Question No 58. is a**

---

**Answer for Question No 59. is c**

---

**Answer for Question No 60. is c**

---

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. A simple protocol used for fetching email from a mail box is**

A : POP3

B : IMAP

C : SMTP

D : POP2

**Q.no 2. Layer-2 Switch is also called**

A : Multiport Hub

B : Multiport Switch

C : Multiport Bridge

D : Multiport NIC

**Q.no 3. \_\_\_\_\_ topology requires a multipoint connection.**

A : Star

B : Mesh

C : Ring

D : Bus

**Q.no 4. DHCP is the abbreviation of**

A : Dynamic Host Control Protocol

**B : Dynamic Host Configuration Protocol**

C : Dynamic Hyper Control Protocol

D : Dynamic Hyper Configuration Protocol

**Q.no 5. When the mail server sends mail to other mail servers it becomes**

---

A : SMTP server

**B : SMTP client**

C : Peer

D : Master

**Q.no 6. AODV stands for**

**A : Ad hoc On-Demand Distance Vector**

B : Advance ondemand distance vector

C : Advance on distance vector

D : All of these

**Q.no 7. TCP, FTP, Telnet, SMTP, POP etc. are examples of** \_\_\_\_\_

A : Socket

B : IP Address

**C : Protocol**

D : MAC Address

**Q.no 8. The term IPv4 stands for?**

A : Internet Protocol Version 4

B : Internet Programming Version 4

C : International Programming Version 4

D : International Protocol Version 4

**Q.no 9. The protocol which is used for defining the legal request and replies is called \_\_\_\_\_.**

A : FTP

B : SMTP

C : TCP

**D : HTTP**

**Q.no 10. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

**B : IP**

C : Physical

D : Subnet Mask

**Q.no 11. What is the header size of a UDP packet?**

**A : 8 bytes**

B : 8 bits

C : 16 bytes

D : 124 bytes

**Q.no 12. Ipv6 is how many bits long**

A : 32

B : 48

**C : 128**

D : 16

**Q.no 13. Which Method can be used for to reduce the collision but canot eliminate it**

A : Listen before talk

B : Listen after talk

C : Sense after transmit

D : Sense before talk

**Q.no 14. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

**C : 802.3 u**

D : 802.11

**Q.no 15. WiMAX stands for \_\_\_\_\_**

**A : Data Link**

B : Network

C : Physical

D : Transport

**Q.no 16. Which network is able to connect to each computer through a common central line?**

**A : Bus**

B : Star

C : router

D : WAN

**Q.no 17. Which methods are commonly used in Server Socket class?**

A : Public Output Stream get Output Stream ()

**B : Public Socket accept ()**

C : Public synchronized void close ()

D : Public void connect ()

**Q.no 18. In TCP, sending and receiving data is done as \_\_\_\_\_**

A : Stream of bytes

B : Sequence of characters

C : Lines of data

D : Packets

**Q.no 19. Which networking device connect one LAN to other LAN using same protocol?**

A : Router

B : Switch

C : Bridge

D : Modem

**Q.no 20. TCP process may not write and read data at the same speed. So we need \_\_\_\_\_ for**

A : Packets

B : Buffers

C : Segments

D : Stacks

**Q.no 21. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

D : 255.255.255.224

**Q.no 22. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

B : Contention window, Acknowledgment and Interframe space

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 23. The maximum length (in bytes) of an IPv4 datagram is?**

A : 32

B : 1024

**C : 65535**

D : 512

**Q.no 24. ICMP is primarily used for \_\_\_\_\_**

**A : error and diagnostic functions**

B : addressing

C : forwarding

D : routing

**Q.no 25. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.**

**A : Transmission control protocol**

B : User datagram protocol

C : Datagram congestion control protocol

D : Stream control transmission protocol

**Q.no 26. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

**A : FDM**

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 27. SSH uses \_\_\_\_\_ to authenticate the remote computer.**

A : public-key cryptography

B : private-key cryptography

C : any of public-key or private-key

D : both public-key & private-key

**Q.no 28. Which one of the following is not a function of network layer?**

A : routing

B : inter-networking

C : congestion control

D : error control

**Q.no 29. In the network HTTP resources are located by \_\_\_\_\_**

A : Uniform resource identifier

B : Unique resource locator

C : Unique resource identifier

D : Union resource locator

**Q.no 30. Error control in the data link layer is based on\_\_\_\_\_**

A : hamming code

B : parity generator

C : retransmission of data

D : data duplication

**Q.no 31. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

C : Stop-and-Wait Protocol

D : Stop Protocol

**Q.no 32. An internet is a \_\_\_\_\_**

A : Collection of WANS

**B : Network of networks**

C : Collection of LANS

D : Collection of identical LANS and WANS

**Q.no 33. There are \_\_ types of HDLC frames**

A : 2

B : 4

C : 5

**D : 3**

**Q.no 34. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is \_\_\_\_\_**

A : Mutual open

B : Mutual Close

**C : Simultaneous open**

D : Simultaneous close

**Q.no 35. In Inet Address class, which method returns the host name of the IP Address?**

**A : Public String get Hostname()**

B : Public String getHostAddress()

C : Public static InetAddress get Localhost()

D : Public getByName()

**Q.no 36. In version field of IPv4 header, when machine is using some other version of IPv4 then datagram is \_\_\_\_\_**

**A : Discarded**

B : Accepted

C : Interpreted

D : Interpreted incorrectly

**Q.no 37. The default connection type used by HTTP is \_\_\_\_\_**

A : Persistent

B : Non-persistent

C : Can be either persistent or non-persistent depending on connection request

D : P- Persistent

**Q.no 38. Which of the following address belongs class A?**

A : 121.12.12.248

B : 130.12.12.248

C : 128.12.12.248

D : 129.12.12.248

**Q.no 39. In gigabit ethernet three or more stations are connected by**

A : 2.4 GHz

B : 5 GHz

C : 2.4 Gbps

D : 5 Gbps

**Q.no 40. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 41. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

D : internet corporation for assigned names and numbers

**Q.no 42. Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_**

A : 161

B : 123

C : 162

D : 124

**Q.no 43. Each frame in HDLC protocol may contain up \_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 44. Define the type of the following destination MAC address**

**4A:30:10:21:10:1A**

A : IEEE 802.11 wireless LAN runs CSMA with collision detection protocol

B : Ethernet is not based on CSMA with collision detection protocol

C : CSMA with collision detection is not suitable for a high propagation delay network like satellite network

D : There is no contention in a CSMA with collision detection network

**Q.no 45. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 46. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

A : Added

B : Removed

C : Rearranged

D : Modified

**Q.no 47. For Stop-and-Wait ARQ, for 20 data packets sent, \_\_\_\_\_ acknowledgments are needed.**

A : less than 10

B : 19

C : 21

**D : 20**

**Q.no 48. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 500 frames per second**

**A : 2msec**

B : 4msec

C : 2sec

D : 4sec

**Q.no 49. Simplex protocol of Data Link Layer works on \_\_\_\_ channels**

**A : noiseless**

B : broadband

C : noisy

D : creative

**Q.no 50. a character-oriented approach and a bit-oriented approaches used in which type of framing?**

A : fixed size

B : zero size

**C : variable-size**

D : cells

**Q.no 51. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

D : Byte stuffing

**Q.no 52. IPv6 does not support which of the following addressing modes?**

A : unicast addressing

B : multicast addressing

C : broadcast addressing

D : anycast addressing

**Q.no 53. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

B : physical layer

C : data link layer

D : transport layer

**Q.no 54. Communication between a computer and a keyboard involves  
\_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 55. In TCP IP Model, when data is sent from device A to device B, the 5th  
layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 56. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

B : 10001

C : 12001

**D : 11001**

**Q.no 57. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

**C : address resolution protocol**

D : Internet Address Chat

**Q.no 58. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 59. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

**C : NRM**

D : ABM

**Q.no 60. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

B : transport layer

C : session layer

D : data link layer

---

**Answer for Question No 1. is a**

---

**Answer for Question No 2. is c**

---

**Answer for Question No 3. is d**

---

**Answer for Question No 4. is b**

---

**Answer for Question No 5. is b**

---

**Answer for Question No 6. is a**

---

**Answer for Question No 7. is c**

---

**Answer for Question No 8. is a**

---

**Answer for Question No 9. is d**

---

**Answer for Question No 10. is b**

---

**Answer for Question No 11. is a**

---

**Answer for Question No 12. is c**

---

**Answer for Question No 13. is a**

---

**Answer for Question No 14. is c**

---

**Answer for Question No 15. is a**

---

**Answer for Question No 16. is a**

---

**Answer for Question No 17. is b**

---

**Answer for Question No 18. is a**

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**Answer for Question No 19. is b**

---

**Answer for Question No 20. is b**

---

**Answer for Question No 21. is d**

---

**Answer for Question No 22. is b**

---

**Answer for Question No 23. is c**

---

**Answer for Question No 24. is a**

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**Answer for Question No 25. is a**

---

**Answer for Question No 26. is a**

---

**Answer for Question No 27. is a**

---

**Answer for Question No 28. is d**

---

**Answer for Question No 29. is a**

---

**Answer for Question No 30. is c**

---

**Answer for Question No 31. is c**

---

**Answer for Question No 32. is b**

---

**Answer for Question No 33. is d**

---

**Answer for Question No 34. is c**

---

**Answer for Question No 35. is a**

---

**Answer for Question No 36. is a**

---

**Answer for Question No 37. is a**

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**Answer for Question No 38. is a**

---

**Answer for Question No 39. is b**

---

**Answer for Question No 40. is b**

---

**Answer for Question No 41. is d**

---

**Answer for Question No 42. is b**

---

**Answer for Question No 43. is c**

---

**Answer for Question No 44. is c**

---

**Answer for Question No 45. is a**

---

**Answer for Question No 46. is a**

---

**Answer for Question No 47. is d**

---

**Answer for Question No 48. is a**

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**Answer for Question No 49. is a**

---

**Answer for Question No 50. is c**

---

**Answer for Question No 51. is d**

---

**Answer for Question No 52. is c**

---

**Answer for Question No 53. is b**

---

**Answer for Question No 54. is d**

---

**Answer for Question No 55. is a**

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**Answer for Question No 56. is b**

---

**Answer for Question No 57. is c**

---

**Answer for Question No 58. is a**

---

**Answer for Question No 59. is c**

---

**Answer for Question No 60. is b**

---

Total number of questions : 60

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Time : 1hr

Max Marks : 50

N.B

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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. A \_\_\_\_\_ set of rules that governs data communication.**

A : Protocols

B : Standards

C : RFCs

D : Servers

**Q.no 2. In virtual circuit network each packet contains \_\_\_\_\_**

A : full source and destination address

B : a short VCI number

C : only source address

D : only destination address

**Q.no 3. MPLS stands for**

A : Multiprotocol Label Switching

B : Multiple links

C : Mobile protocol links

D : Multiple layer switching

**Q.no 4. How does a DHCP server dynamically assign IP address to host?**

A : Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.

B : Addresses are assigned for a fixed period of time. At the end of period, a new quest for an address must be made, and another address is then assigned.

C : Addresses are leased to host. A host will usually keep the same address by periodically contacting the DHCP sever to renew the lease.

D : Addresses are permanently assigned so that the host uses the same address at all times.

**Q.no 5. The client in socket programming must know which information?**

A : IP address of Server

B : Port number

C : Both IP address of Server & Port number

D : Only its own IP address

**Q.no 6. In point to point protocol \_\_\_\_ field of PPP Frame carries the user data.**

A : flag

B : payload

C : Protocol

D : FCS

**Q.no 7. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 8. An email client needs to know the \_\_\_\_\_ of its initial SMTP server.**

A : IP address

B : MAC address

C : URL

D : Name

**Q.no 9. In Active mode FTP, the client initiates both the control and data connections.**

A : true

B : false

C : None

D : Can not predict

**Q.no 10. Which Method can be used for to reduce the collision but canot eliminate it**

A : Listen before talk

B : Listen after talk

C : Sense after transmit

D : Sense before talk

**Q.no 11. Which of the following can be Software?**

A : Routers

B : Firewalls

C : bridge

D : Modems

**Q.no 12. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

D : Routes to use for forwarding data to its destination

**Q.no 13. What is the header size of a UDP packet?**

A : 8 bytes

B : 8 bits

C : 16 bytes

D : 124 bytes

**Q.no 14. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 15. Which of the following is not the Networking Devices?**

A : Gateways

B : Linux

C : Routers

D : Firewalls

**Q.no 16. BGP stands for**

A : Bypass gateway protocol

B : Border gateway protocol

C : Bootstrap Protocol

D : Boundary gateway protocol

**Q.no 17. The location of a resource on the internet is given by its?**

A : Protocol

B : URL

C : E-mail address

D : website

**Q.no 18. The network layer protocol for internet is \_\_\_\_\_**

A : ethernet

**B : Internet protocol**

C : hypertext transfer protocol

D : file transfer protocol

**Q.no 19. Which type of network is used for small geographical area such as in a one building?**

A : WLAN

B : MAN

**C : LAN**

D : WAN

**Q.no 20. The Maximum throughput for pure aloha is\_\_\_\_ percent**

A : CSMA with collision detection

**B : CSMA with collision avoidance**

C : Pure Aloha

D : Slotted Aloha

**Q.no 21. A connection in SCTP is called an \_\_\_\_\_**

A : negotiation

**B : association**

C : transmission

D : reception

**Q.no 22. Standard ethernet use which topologies**

A : CSMA with collision avoidance

B : Pure Aloha

C : Slotted Aloha

D : CSMA with collision detection

**Q.no 23. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

A : FDM

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 24. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_**

A : stream mode

B : block mode

C : compressed mode

D : message mode

**Q.no 25. Communication offered by TCP is \_\_\_\_\_**

A : Full-duplex

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 26. Which one of the following is not a function of network layer?**

A : routing

B : inter-networking

C : congestion control

D : error control

**Q.no 27. In Inet Address class, which method returns the host name of the IP Address?**

A : Public String get Hostname()

B : Public String getHostAddress()

C : Public static InetAddress get Localhost()

D : Public getByName()

**Q.no 28. Coaxial cable consists of \_\_\_\_\_ concentric copper conductors.**

A : 1

**B : 2**

C : 3

D : 4

**Q.no 29. The meaning of Straight-through Cable is**

**A : Four wire pairs connect to the same pin on each end**

B : The cable Which Directly connects Computer to Computer

C : Four wire pairs not twisted with each other

D : The cable which is not twisted

**Q.no 30. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

**C : resource reservation protocol**

D : session initiation protocol

**Q.no 31. How many different type of server exist?**

A : Only one

B : Two

C : Three

**D : Four**

**Q.no 32. What is the frequency range of IEEE 802.11a standard**

A : 6Mbps

B : 11Mbps

C : 22Mbps

D : 54Mbps

**Q.no 33. In SMTP, the command to write receiver's mail address is written with the command \_\_\_\_\_**

A : SEND TO

B : RCPT TO

C : MAIL TO

D : RCVR TO

**Q.no 34. DHCP \_\_\_\_\_ occur every 60 minutes**

A : Multicast Scope

B : Super Scope

C : Subnet Mask

D : Automatic Backups

**Q.no 35. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 36. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

A : sliding window

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 37. Bit stuffing means adding extra 0 to the data section of the frame when there is a sequence of bits with the same pattern as the \_\_\_\_\_**

A : header

B : trailer

C : payload

D : flag

**Q.no 38. What is the maximum data rate for the 802.11g standard**

A : 10 to 15 percent

B : 5 to 10 percent

C : 0 to 5 percent

D : 15 to 20 percent

**Q.no 39. In the network HTTP resources are located by \_\_\_\_\_**

A : Uniform resource identifier

B : Unique resource locator

C : Unique resource identifier

D : Union resource locator

**Q.no 40. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 41. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

A : 000D

B : CB84

C : 001C

D : 001D

**Q.no 42. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 43. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

B : transport layer

C : session layer

D : data link layer

**Q.no 44. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 45. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 46. For which one of the following reasons does Internet Protocol (IP) use the time-to-live (TTL) field in the IP datagram header**

A : Ensure packets reach destination within that time

B : Discard packets that reach later than that time

C : prevent packets from looping indefinitely

D : Limit the time for which the packet gets queued in intermediate routers

**Q.no 47. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

A : Added

B : Removed

C : Rearranged

D : Modified

**Q.no 48. MIME uses the same \_\_\_\_\_ format**

A : RFC822

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 49. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 500 frames per second**

A : 2msec

B : 4msec

C : 2sec

D : 4sec

**Q.no 50. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

**D : 151 frames**

**Q.no 51. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

B : ABM

C : NBM

D : NRM

**Q.no 52. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

B : distributed system

C : networking system

D : mail system

**Q.no 53. In PPP, the default maximum length of the information field is \_\_\_\_\_**

A : 1500 bytes

B : 15000 bytes

C : 150 bytes

D : 15 bytes

**Q.no 54. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

A : PAP

B : CHAP

C : SAP

D : LCP

**Q.no 55. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

A : SYNC flooding attack

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 56. The port number is “ephemeral port number”, if the source host is \_\_\_\_\_**

A : NTP

B : Echo

C : Server

**D : Client**

**Q.no 57. What does the java.net.InetAddress class represent?**

A : Socket

**B : IP Address**

C : Protocol

D : MAC Address

**Q.no 58. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

**A : each station can send both commands and respond to commands**

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 59. HDLC supports two types of transfer modes \_\_\_\_\_ and \_\_\_\_\_**

A : normal response mode and abnormal response mode.

**B : normal response mode and asynchronous balanced mode.**

C : command mode and respond mode

D : synchronous balanced mode and asynchronous balanced mode.

**Q.no 60. Which is the correct expression for the length of UDP datagram?**

**A : UDP length = IP length – IP header's length**

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

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**Answer for Question No 1. is a**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is a**

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**Answer for Question No 4. is c**

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**Answer for Question No 5. is c**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is c**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is b**

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**Answer for Question No 10. is a**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is d**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is d**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is b**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is c**

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**Answer for Question No 20. is b**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is d**

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**Answer for Question No 23. is a**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is a**

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**Answer for Question No 28. is b**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is c**

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**Answer for Question No 31. is d**

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**Answer for Question No 32. is d**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is b**

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**Answer for Question No 36. is a**

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**Answer for Question No 37. is d**

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**Answer for Question No 38. is b**

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**Answer for Question No 39. is a**

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**Answer for Question No 40. is b**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is b**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is c**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is a**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is d**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is b**

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**Answer for Question No 53. is a**

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**Answer for Question No 54. is d**

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**Answer for Question No 55. is a**

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**Answer for Question No 56. is d**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is b**

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**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
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- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

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**Q.no 1. Which type of network is used for small geographical area such as in a one building?**

A : WLAN

B : MAN

C : LAN

D : WAN

**Q.no 2. WiMAX stands for \_\_\_\_\_**

A : Data Link

B : Network

C : Physical

D : Transport

**Q.no 3. What is the header size of a UDP packet?**

A : 8 bytes

B : 8 bits

C : 16 bytes

D : 124 bytes

**Q.no 4. Which topology used by CSMA with collision detection**

A : MAC address

B : IP address

C : port address

D : specific address

**Q.no 5. Ipv6 is how many bits long**

A : 32

B : 48

C : 128

D : 16

**Q.no 6. ICMP stands for**

A : Internet Control Message Protocol

B : Internet Control Management Protocol

C : Internal Control Manage Protocol

D : Internet Count Management Protocol

**Q.no 7. Which network topology requires a central controller or hub?**

A : Mesh

B : Star

C : Ring

D : Bus

**Q.no 8. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

**B : IP**

C : Physical

D : Subnet Mask

**Q.no 9. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

A : Class B

B : Class c

**C : Forwarder**

D : Class D

**Q.no 10. CSMA is based on the principle of**

A : p persistent

**B : nonpersistent**

C : 1 persistent

D : Persistent

**Q.no 11. Modulator and demodulator as combinely is known as –**

A : Modulus

**B : Modem**

C : Mod switch

D : Mod access

**Q.no 12. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_ can access the network.**

A : MAC Address

B : IP Address

**C : MAC and IP address**

D : MAC or IP address

**Q.no 13. Which of the following is an example of Personal Area Networking?**

A : Bluetooth

B : WAN

C : WLAN

D : LAN

**Q.no 14. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 15. FTP server listens for connection on which port number?**

A : 20

B : 21

C : 22

D : 23

**Q.no 16. \_\_\_\_\_ protocol has no flow or error control.**

A : simplex

B : complex

C : duplex

D : half duplex

**Q.no 17. Physical or logical arrangement of network is ?**

A : Topology

B : Routing

C : Networking

D : Control

**Q.no 18. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

A : standard

**B : fixed-size**

C : variable-size

D : character

**Q.no 19. \_\_\_\_\_ topology requires a multipoint connection.**

A : Star

B : Mesh

C : Ring

**D : Bus**

**Q.no 20. which Displays entries in DNS cache**

**A : ipconfig /displaydns**

B : ipconfig /flushdns

C : Normal DHCP Scope

D : ipconfig /registerdns

**Q.no 21. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

**C : Determines on which outing link a packet is to be forwarded**

D : Forwards a packet to all outgoing links except the originated link

**Q.no 22. \_\_\_\_\_ Sets an alias for a host name**

A : DNS Event Logging tab

B : DNS Debug Logging tab

**C : DNS CNAME (canonical name)**

D : DNS Event and Debug tab

**Q.no 23. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

**B : Contention window, Acknowledgment and Interframe space**

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 24. In Fast Ethernet 100Base TX use -----Line coding technique**

**A : Management frames, Control frames and Data frames.**

B : Supervisory Frame, Information frame and data frame

C : Management frames,Supervisory frame and control frame

D : Supervisory Frame, Information frame and Control frame

**Q.no 25. Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?**

**A : Star**

B : Router

C : Bus

D : LAN

**Q.no 26. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

**D : Protocol**

**Q.no 27. Connection establishment in TCP is done by which mechanism?**

A : Flow control

**B : Three-Way Handshaking**

C : Forwarding

D : Synchronization

**Q.no 28. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_**

A : stream mode

B : block mode

C : compressed mode

**D : message mode**

**Q.no 29. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

**C : Stop-and-Wait Protocol**

D : Stop Protocol

**Q.no 30. POP3 and IMAP are e-mail accounts in which**

A : One automatically gets one's mail everyday

B : One has to be connected to the server to read or write one's mail

**C : One only has to be connected to the server to send and receive email**

D : One does not need any telephone lines

**Q.no 31. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

**B : 67**

C : 68

D : 69

**Q.no 32. The meaning of Straight-through Cable is**

**A : Four wire pairs connect to the same pin on each end**

B : The cable Which Directly connects Computer to Computer

C : Four wire pairs not twisted with each other

D : The cable which is not twisted

**Q.no 33. The default connection type used by HTTP is \_\_\_\_\_**

A : Persistent

B : Non-persistent

C : Can be either persistent or non-persistent depending on connection request

D : P- Persistent

**Q.no 34. In sliding window protocol, the send window can slide one or more slots when valid \_\_\_\_ arrives.**

A : bit

B : request

C : flag

D : acknowledgement

**Q.no 35. Discarding policy is mainly done by \_\_\_\_\_**

A : Sender

B : Receiver

C : Router

D : Switch

**Q.no 36. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

A : sliding window

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 37. A proxy server is used as the computer?**

A : with external access

B : acting as a backup

C : performing file handling

D : accessing user permissions

**Q.no 38. The maximum size of payload field in ethernet frame is \_\_\_\_\_**

A : IEEE 802.3

**B : IEEE 802.11**

C : IEEE 802.2

D : IEEE 802.15

**Q.no 39. In SMTP, the command to write receiver's mail address is written with the command \_\_\_\_\_**

A : SEND TO

**B : RCPT TO**

C : MAIL TO

D : RCVR TO

**Q.no 40. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?**

**A : SRTP**

B : RTCP

C : RCP

D : RTCT

**Q.no 41. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

A : 000D

**B : CB84**

C : 001C

D : 001D

**Q.no 42. IPv6 does not support which of the following addressing modes?**

A : unicast addressing

B : multicast addressing

C : broadcast addressing

D : anycast addressing

**Q.no 43. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

B : Transmission control protocol

C : Border gateway protocol

D : Domain host control protocol

**Q.no 44. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 45. \_\_\_ refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.**

A : Flow control

B : Speed control

C : Error control

D : Data control

**Q.no 46. Beyond IP, UDP provides additional services such as \_\_\_\_\_**

A : Routing and switching

B : Sending and receiving of packets

C : Multiplexing and demultiplexing

D : Demultiplexing and error checking

**Q.no 47. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 1000 frames per second**

A : 92 frames

**B : 368 frames**

C : 276 frames

D : 151 frames

**Q.no 48. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

**B : an SMTP extension**

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 49. MIME uses the same \_\_\_\_\_ format**

**A : RFC822**

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 50. \_\_\_\_\_ is a bit oriented protocol for communication over point to point and multipoint links.**

**A : High level Data link Control (HDLC)**

B : Highest level Data link Control (HDLC)

C : Hyper Text Transfer Protocol (HTTP)

D : Domain Name Server (DNS) Protocol

**Q.no 51. In PPP, the default maximum length of the information field is \_\_\_\_\_**

**A : 1500 bytes**

B : 15000 bytes

C : 150 bytes

D : 15 bytes

**Q.no 52. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 53. Which is the correct expression for the length of UDP datagram?**

A : UDP length = IP length – IP header's length

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 54. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 55. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

D : 151 frames

**Q.no 56. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

D : Acknowledgment

**Q.no 57. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 58. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 59. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 60. Which one of the following algorithm is not used for congestion control?**

A : traffic aware routing

B : admission control

C : load shedding

D : routing information protocol

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**Answer for Question No 1. is c**

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**Answer for Question No 2. is a**

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**Answer for Question No 3. is a**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is c**

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**Answer for Question No 6. is a**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is c**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is d**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is a**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is d**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is c**

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**Answer for Question No 22. is c**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is b**

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**Answer for Question No 28. is d**

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**Answer for Question No 29. is c**

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**Answer for Question No 30. is c**

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**Answer for Question No 31. is b**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is a**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is c**

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**Answer for Question No 36. is a**

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**Answer for Question No 37. is a**

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**Answer for Question No 38. is b**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is a**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is c**

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**Answer for Question No 43. is b**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is d**

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**Answer for Question No 47. is b**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is a**

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**Answer for Question No 52. is a**

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**Answer for Question No 53. is a**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is d**

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**Answer for Question No 56. is d**

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**Answer for Question No 57. is a**

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**Answer for Question No 58. is d**

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**Answer for Question No 59. is b**

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**Answer for Question No 60. is d**

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Seat No -

Total number of questions : 60

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Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
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- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. \_\_\_\_\_ topology requires a multipoint connection.**

A : Star

B : Mesh

C : Ring

D : Bus

**Q.no 2. Which of the following is false with respect to TCP?**

A : Connection-oriented

B : Process-to-process

C : Transport layer protocol

D : Unreliable

**Q.no 3. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

A : Class B

B : Class c

**C : Forwarder**

D : Class D

**Q.no 4. Which networking device connect one LAN to other LAN using same protocol?**

A : Router

**B : Switch**

C : Bridge

D : Modem

**Q.no 5. which Displays entries in DNS cache**

**A : ipconfig /displaydns**

B : ipconfig /flushdns

C : Normal DHCP Scope

D : ipconfig /registerdns

**Q.no 6. In virtual circuit network each packet contains \_\_\_\_\_**

A : full source and destination address

**B : a short VCI number**

C : only source address

D : only destination address

**Q.no 7. Which protocol provides the synchronization between media streams?**

A : RTP

**B : RTCP**

C : RPC

D : RTCT

**Q.no 8. The IEEE standard used for wimax technology is**

A : 12.2

**B : 18.4**

C : 36.8

D : 13.5

**Q.no 9. \_\_\_\_\_. Is the process of placing timestamps on dynamically registered records**

**A : Aging**

B : IP

C : AIPAA

D : tcp

**Q.no 10. Which of the following is an example of Personal Area Networking?**

**A : Bluetooth**

B : WAN

C : WLAN

D : LAN

**Q.no 11. A local telephone network is an example of a \_\_\_\_\_ network.**

A : Packet switched

**B : Circuit switched**

C : Bit switched

D : Line switched

**Q.no 12. What is the default port of HTTP?**

A : 20

B : 101

**C : 80**

D : 60

**Q.no 13. Which one of the following is TRUE about interior Gateway routing protocols - Routing Information Protocol (RIP) and Open Shortest Path First (OSPF)**

A : RIP uses distance vector routing and OSPF uses link state routing

B : OSPF uses distance vector routing and RIP uses link state routing

C : Both RIP and OSPF use link state routing

D : Both RIP and OSPF use distance vector routing

**Q.no 14. Protocols are set of rules to govern \_\_\_\_\_**

A : Communication

B : Standard

C : Metropolitan communication

D : Bandwidth

**Q.no 15. \_\_\_\_\_ protocol has no flow or error control.**

A : simplex

B : complex

C : duplex

D : half duplex

**Q.no 16. A \_\_\_\_\_ set of rules that governs data communication.**

A : Protocols

B : Standards

C : RFCs

D : Servers

**Q.no 17. When the mail server sends mail to other mail servers it becomes \_\_\_\_\_**

A : SMTP server

B : SMTP client

C : Peer

D : Master

**Q.no 18. Data communication system within a building or campus is \_\_\_\_\_**

A : LAN

B : WAN

C : MAN

D : PAN

**Q.no 19. DHCP is used for \_\_\_\_\_**

A : IPv6

B : IPv4

C : Both IPv6 and IPv4

D : IPv6 or IPv4

**Q.no 20. Connection Oriented Protocol for end-to-end communication is called \_\_\_\_\_**

A : Aging

B : IP

C : AIPAA

D : tcp

**Q.no 21. Which Strategies used by CSMA with collision avoidance**

A : 1500 bytes , 46 bytes

B : 46 bytes, 1500 bytes

C : 64 bytes, 1518 bytes

D : 512 bits, 12144 bytes

**Q.no 22. Communication offered by TCP is \_\_\_\_\_**

A : Full-duplex

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 23. Which of the following layer of OSI model also called end-to-end layer?**

A : Presentation layer

B : Network layer

C : Session layer

**D : Transport layer**

**Q.no 24. POP3 and IMAP are e-mail accounts in which**

A : One automatically gets one's mail everyday

B : One has to be connected to the server to read or write one's mail

**C : One only has to be connected to the server to send and receive email**

D : One does not need any telephone lines

**Q.no 25. What is Maximum channel utilization of Slotted Aloha**

A : p persistent

B : nonpersistent

**C : 1 persistent**

D : Persistent

**Q.no 26. In byte stuffing (or character stuffing), a special byte known as \_\_\_\_ is added to the data section of the frame when there is a character with the same pattern as the flag.**

A : excuse character

B : entry character

C : exit character

**D : escape character**

**Q.no 27. How many different type of server exist?**

A : Only one

B : Two

C : Three

D : Four

**Q.no 28. Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?**

A : Star

B : Router

C : Bus

D : LAN

**Q.no 29. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 30. Which of the following protocol is defined in Transport layer?**

A : FTP

B : TCP

C : IP

D : Telnet

**Q.no 31. In Stop-and-Wait ARQ~the acknowledgment number always announces in \_\_\_\_\_ arithmetic the sequence number of the next frame expected**

A : modulo-2

B : modulo-4

C : modulo-8

D : modulo-n

**Q.no 32. The DHCP server \_\_\_\_\_**

A : maintains a database of available IP addresses

B : maintains the information about client configuration parameters

C : grants a IP address when receives a request from a client

D : Maintains a database of IP address, information about client configuration and grants IP address

**Q.no 33. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 34. Coaxial cable consists of \_\_\_\_\_ concentric copper conductors.**

A : 1

B : 2

C : 3

D : 4

**Q.no 35. What is DHCP snooping?**

A : techniques applied to ensure the security of an existing DHCP infrastructure

B : algorithm for DHCP

C : encryption of the DHCP server requests

D : decryption of the DHCP server requests

**Q.no 36. MANET stands for**

A : Wireless ad hoc network

B : Mobile ad hoc network

C : Multiple ad hoc network

D : Multi advance network

**Q.no 37. Which classes are used for connection-less socket programming?**

A : Datagram Socket

B : Datagram Packet

C : Both Datagram Socket & Datagram Packet

D : Server Socket

**Q.no 38. Size of TCP segment header ranges between \_\_\_\_\_**

A : 16 and 32 bytes

B : 16 and 32 bits

C : 20 and 60 bytes

D : 20 and 60 bits

**Q.no 39. A connection in SCTP is called an \_\_\_\_\_**

A : negotiation

B : association

C : transmission

D : reception

**Q.no 40. Bridge works in which layer of the OSI model?**

A : Application layer

B : Transport layer

C : Network layer

D : Datalink layer

**Q.no 41. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

A : Added

B : Removed

C : Rearranged

D : Modified

**Q.no 42. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

A : each station can send both commands and respond to commands

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 43. The values GET, POST, HEAD etc are specified in \_\_\_\_\_ of HTTP message**

A : Request line

B : Header line

C : Status line

D : Entity body

**Q.no 44. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

D : internet corporation for assigned names and numbers

**Q.no 45. For Stop-and-Wait ARQ, for 20 data packets sent, \_\_\_\_\_ acknowledgments are needed.**

A : less than 10

B : 19

C : 21

D : 20

**Q.no 46. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

B : 8

C : 4

D : 10

**Q.no 47. In HDLC which frames are used only to transport control information?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 48. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

B : 10001

C : 12001

D : 11001

**Q.no 49. Three types of HDLC frames are :**

A : Data frames, Supervisory frames, Un-numbered frames

B : Information frames, Supervisory frames, Un-numbered frames

C : Information frames, Supervisory frames, Numbered frames

D : Information frames, Controlled frames, Numbered frames

**Q.no 50. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 51. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

C : NRM

D : ABM

**Q.no 52. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

**B : distributed system**

C : networking system

D : mail system

**Q.no 53. Which of the following routing protocol used for network layer design?**

A : Static Routing Algorithm

**B : Distance vector routing Protocol**

C : Dynamic Routing Algorithm

D : Hybrid Routing Algorithm

**Q.no 54. The port number is “ephemeral port number”, if the source host is \_\_\_\_\_**

A : NTP

B : Echo

C : Server

**D : Client**

**Q.no 55. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

**D : 128.64.0.0**

**Q.no 56. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

B : transport layer

C : session layer

D : data link layer

**Q.no 57. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

B : physical layer

C : data link layer

D : transport layer

**Q.no 58. \_\_\_\_\_ is a bit oriented protocol for communication over point to point and multipoint links.**

A : High level Data link Control (HDLC)

B : Highest level Data link Control (HDLC)

C : Hyper Text Transfer Protocol (HTTP)

D : Domain Name Server (DNS) Protocol

**Q.no 59. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

D : Byte stuffing

**Q.no 60. Which one of the following algorithm is not used for congestion control?**

A : traffic aware routing

B : admission control

C : load shedding

D : routing information protocol

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**Answer for Question No 1. is d**

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**Answer for Question No 2. is d**

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**Answer for Question No 3. is c**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is a**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is a**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is c**

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**Answer for Question No 20. is d**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is d**

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**Answer for Question No 24. is c**

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**Answer for Question No 25. is c**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is b**

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**Answer for Question No 30. is b**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is d**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is b**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is c**

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**Answer for Question No 38. is c**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is d**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is a**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is d**

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**Answer for Question No 46. is b**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is b**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is c**

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**Answer for Question No 52. is b**

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**Answer for Question No 53. is b**

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**Answer for Question No 54. is d**

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**Answer for Question No 55. is d**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is d**

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**Answer for Question No 60. is d**

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Seat No -

Total number of questions : 60

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Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. \_\_\_\_\_. Is the process of placing timestamps on dynamically registered records**

A : Aging

B : IP

C : AIPAA

D : tcp

**Q.no 2. Which one of the following is an internet standard protocol for managing devices on IP network?**

A : dynamic host configuration protocol

B : simple network management protocol

C : internet message access protocol

D : media gateway protocol

**Q.no 3. How many versions available of IP?**

A : 6 version

B : 4 version

C : 2 version

D : 1 version

**Q.no 4. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 5. In the congestion avoidance algorithm, the size of the congestion window increases \_\_\_\_\_ until congestion is detected.**

A : exponentially

B : additively

C : multiplicatively

D : suddenly

**Q.no 6. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_**

A : bits

B : byes

C : megabytes

D : megabits

**Q.no 7. In point to point protocol \_\_\_\_ field of PPP Frame carries the user data.**

A : flag

B : payload

C : Protocol

D : FCS

**Q.no 8. A \_\_\_\_\_ set of rules that governs data communication.**

A : Protocols

B : Standards

C : RFCs

D : Servers

**Q.no 9. The \_\_\_\_\_ layer of ethernet consist of LLC sublayer and MAC sublayer**

A : Maximum Propagation time T<sub>p</sub>

B : Transmission time

C : Back off Time

D : Wait time out time

**Q.no 10. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

D : Routes to use for forwarding data to its destination

**Q.no 11. ICMP stands for**

A : Internet Control Message Protocol

B : Internet Control Management Protocol

C : Internal Control Manage Protocol

D : Internet Count Management Protocol

**Q.no 12. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 13. What is the purpose of the DHCP server?**

- A : to provide storage for email
- B : to translate URLs to IP addresses
- C : to translate IPv4 addresses to MAC addresses
- D : to provide an IP configuration information to hosts

**Q.no 14. MAC Address is the example of**

- A : Transport Layer
- B : Data Link Layer
- C : Application Layer
- D : Physical Layer

**Q.no 15. Which methods are commonly used in Server Socket class?**

- A : Public Output Stream get Output Stream ()
- B : Public Socket accept ()
- C : Public synchronized void close ()
- D : Public void connect ()

**Q.no 16. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

- A : standard
- B : fixed-size
- C : variable-size
- D : character

**Q.no 17. The Maximum throughput for pure aloha is\_\_\_\_ percent**

- A : CSMA with collision detection
- B : CSMA with collision avoidance
- C : Pure Aloha
- D : Slotted Aloha

**Q.no 18. The location of a resource on the internet is given by its?**

- A : Protocol
- B : URL
- C : E-mail address
- D : website

**Q.no 19. WiMAX stands for \_\_\_\_\_**

- A : Data Link
- B : Network
- C : Physical
- D : Transport

**Q.no 20. How does a DHCP server dynamically assign IP address to host?**

- A : Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.
- B : Addresses are assigned for a fixed period of time. At the end of period, a new quest for an address must be made, and another address is then assigned.
- C : Addresses are leased to host. A host will usually keep the same address by periodically contacting the DHCP sever to renew the lease.
- D : Addresses are permanently assigned so that the host uses the same address at all times.

**Q.no 21. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends \_\_\_\_\_**

- A : Packet which are not lost
- B : Only those packets which are lost or corrupted
- C : Packet from starting
- D : All the packets

**Q.no 22. Which of the following fields in IPV4 datagram is not related to fragmentation?**

- A : Type of service

B : Fragment offset

C : Flags

D : Identification

**Q.no 23. Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?**

A : Star

B : Router

C : Bus

D : LAN

**Q.no 24. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

A : FDM

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 25. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

C : resource reservation protocol

D : session initiation protocol

**Q.no 26. The Maximum length of 1000BaseSX is**

A : Ring topology

B : Bus topology

C : Star topology

D : Mesh topology

**Q.no 27. A connection in SCTP is called an \_\_\_\_\_**

A : negotiation

B : association

C : transmission

D : reception

**Q.no 28. The data link layer pack bits into \_\_\_\_.**

A : segments

B : clusters

C : packets

D : frames

**Q.no 29. Which of following provides reliable communication?**

A : TCP

B : IP

C : UDP

D : All of the above

**Q.no 30. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client.**

A : IP address

B : MAC Address

C : Port Address

D : Physical Address

**Q.no 31. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.**

A : Transmission control protocol

B : User datagram protocol

C : Datagram congestion control protocol

D : Stream control transmission protocol

**Q.no 32. What does Router do in a network?**

- A : Forwards a packet to all outgoing links
- B : Forwards a packet to the next free outgoing link
- C : Determines on which outgoing link a packet is to be forwarded
- D : Forwards a packet to all outgoing links except the originated link

**Q.no 33. Size of TCP segment header ranges between \_\_\_\_\_**

- A : 16 and 32 bytes
- B : 16 and 32 bits
- C : 20 and 60 bytes
- D : 20 and 60 bits

**Q.no 34. CSMA with collision avoidance method is used for**

- A : Contention window, negative Acknowledgment and Interframe space
- B : Contention window, Acknowledgment and Interframe space
- C : Negative Acknowledgment, Contention window, and Interframe space
- D : Contention window, Positive Acknowledgment and IFR

**Q.no 35. In FTP protocol, client contacts server using \_\_\_ as the transport protocol.**

- A : transmission control protocol
- B : user datagram protocol
- C : datagram congestion control protocol
- D : stream control transmission protocol

**Q.no 36. MANET stands for**

- A : Wireless ad hoc network
- B : Mobile ad hoc network
- C : Multiple ad hoc network
- D : Multi advance network

**Q.no 37. Which protocol gives a full route table update every 30 seconds?**

A : IEGRP

B : RIP

C : ICMP

D : IP

**Q.no 38. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 39. A wireless LAN defined by IEEE 802.11 has categories of frames which are those**

A : 1000 bytes

B : 1200 bytes

C : 1300 bytes

D : 1500 bytes

**Q.no 40. Which of this is not a guided media ?**

A : Fiber optical cable

B : Coaxial cable

C : Wireless LAN

D : Copper wire

**Q.no 41. Which of the following routing protocol used for network layer design?**

A : Static Routing Algorithm

B : Distance vector routing Protocol

C : Dynamic Routing Algorithm

D : Hybrid Routing Algorithm

**Q.no 42. Simplex protocol of Data Link Layer works on \_\_\_\_ channels**

- A : noiseless
- B : broadband
- C : noisy
- D : creative

**Q.no 43. In PPP, the default maximum length of the information field is \_\_\_\_\_**

- A : 1500 bytes
- B : 15000 bytes
- C : 150 bytes
- D : 15 bytes

**Q.no 44. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is source port number.**

- A : 000D
- B : CB84
- C : 001C
- D : 001D

**Q.no 45. The process of modifying IP address information in IP packet headers while in transit across a traffic routing device is called**

- A : Port address translation (PAT)
- B : Network address translation (NAT)
- C : Address mapping
- D : Port mapping

**Q.no 46. The ASCII encoding of binary data is called**

- A : base 64 encoding
- B : base 32 encoding
- C : base 16 encoding

D : base 8 encoding

**Q.no 47. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

D : Byte stuffing

**Q.no 48. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 49. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 50. The \_\_\_\_\_ Protocol, adds a simple error control mechanism to the \_\_\_\_\_ Protocol.**

A : Selective Repeat ARQ; Go-Back-N ARQ

B : Go-Back-N ARQ; Stop-and-Wait

C : Stop-and-Wait ARQ; Go-Back-N ARQ

D : Stop-and-Wait ARQ; Stop-and-Wait

**Q.no 51. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 52. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?**

A : HTTP

B : FTP

C : Telnet

D : TCP

**Q.no 53. Beyond IP, UDP provides additional services such as \_\_\_\_\_**

A : Routing and switching

B : Sending and receiving of packets

C : Multiplexing and demultiplexing

D : Demultiplexing and error checking

**Q.no 54. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 55. MIME uses the same \_\_\_\_\_ format**

A : RFC822

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 56. Three types of HDLC frames are :**

A : Data frames, Supervisory frames, Un-numbered frames

B : Information frames, Supervisory frames, Un-numbered frames

C : Information frames, Supervisory frames, Numbered frames

D : Information frames, Controlled frames, Numbered frames

**Q.no 57. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps What is the requirement to make this frame collision free**

A : multicast address

B : Broadcast address

C : Unicast address

D : Anycast address

**Q.no 58. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

D : 128.64.0.0

**Q.no 59. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

A : Added

B : Removed

C : Rearranged

D : Modified

**Q.no 60. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames



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**Answer for Question No 1. is a**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is c**

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**Answer for Question No 4. is c**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is a**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is d**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is d**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is b**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is a**

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**Answer for Question No 20. is c**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is a**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is c**

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**Answer for Question No 26. is c**

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**Answer for Question No 27. is b**

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**Answer for Question No 28. is d**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is c**

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**Answer for Question No 33. is c**

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**Answer for Question No 34. is b**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is b**

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**Answer for Question No 38. is b**

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**Answer for Question No 39. is d**

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**Answer for Question No 40. is c**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is a**

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**Answer for Question No 44. is b**

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**Answer for Question No 45. is b**

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**Answer for Question No 46. is a**

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**Answer for Question No 47. is d**

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**Answer for Question No 48. is d**

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**Answer for Question No 49. is b**

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**Answer for Question No 50. is d**

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**Answer for Question No 51. is d**

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**Answer for Question No 52. is c**

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**Answer for Question No 53. is d**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is a**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is d**

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**Answer for Question No 59. is a**

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**Answer for Question No 60. is b**

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Total number of questions : 60

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Time : 1hr

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  - 10) Darken ONLY ONE CIRCLE for each answer.
- 

**Q.no 1. CIDR stands for**

A : Classless Inter-Domain Routing

B : Classless Intra-Domain Routing

C : Classful Inter-Domain Routing

D : Classful Intra-Domain Routing

**Q.no 2. Which one of the following is TRUE about interior Gateway routing protocols - Routing Information Protocol (RIP) and Open Shortest Path First (OSPF)**

A : RIP uses distance vector routing and OSPF uses link state routing

**B : OSPF uses distance vector routing and RIP uses link state routing**

C : Both RIP and OSPF use link state routing

D : Both RIP and OSPF use distance vector routing

**Q.no 3. DNS is the abbreviation of**

- A : Dynamic Name System
- B : Dynamic Network System
- C : Domain Name System**
- D : Domain Network Service

**Q.no 4. Ipv6 is how many bits long**

- A : 32
- B : 48
- C : 128**
- D : 16

**Q.no 5. Protocols are set of rules to govern \_\_\_\_\_**

- A : Communication
- B : Standard**
- C : Metropolitan communication
- D : Bandwidth

**Q.no 6. HDLC protocol resides in \_\_\_ layer**

- A : Data Link Layer**
- B : Application Layer
- C : Transport Layer
- D : Network Layer

**Q.no 7. MPLS stands for**

- A : Multiprotocol Label Switching
- B : Multiple links**
- C : Mobile protocol links
- D : Multiple layer switching

**Q.no 8. In point to point protocol \_\_\_\_ field of PPP Frame carries the user data.**

A : flag

B : payload

C : Protocol

D : FCS

**Q.no 9. A \_\_\_\_\_ set of rules that governs data communication.**

A : Protocols

B : Standards

C : RFCs

D : Servers

**Q.no 10. \_\_\_\_ protocol has neither flow control nor error control**

A : stop and wait

B : simplest

C : easiest

D : ARQ

**Q.no 11. Which methods are commonly used in Server Socket class?**

A : Public Output Stream get Output Stream ()

B : Public Socket accept ()

C : Public synchronized void close ()

D : Public void connect ()

**Q.no 12. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

A : standard

B : fixed-size

C : variable-size

D : character

**Q.no 13. IEEE created Gigabit Ethernet under the name \_\_\_\_\_**

- A : Four
- B : Eight
- C : Six
- D : Seven**

**Q.no 14. When the mail server sends mail to other mail servers it becomes \_\_\_\_\_**

- A : SMTP server
- B : SMTP client**
- C : Peer
- D : Master

**Q.no 15. Layer-2 Switch is also called**

- A : Multiport Hub
- B : Multiport Switch**
- C : Multiport Bridge
- D : Multiport NIC

**Q.no 16. When displaying a web page, the application layer uses the \_\_\_\_\_**

- A : HTTP protocol
- B : FTP protocol**
- C : SMTP protocol
- D : TCP protocol

**Q.no 17. The network layer protocol for internet is \_\_\_\_\_**

- A : ethernet
- B : Internet protocol**
- C : hypertext transfer protocol
- D : file transfer protocol

**Q.no 18. TCP process may not write and read data at the same speed. So we need \_\_\_\_\_ for**

A : Packets

**B : Buffers**

C : Segments

D : Stacks

**Q.no 19. \_\_\_\_\_ is used in dealing with error detection and error correction**

**A : Samming distance**

B : Hamming distance

C : Tamming distance

D : Spamming distance

**Q.no 20. Hardware address is known as \_\_\_\_\_**

A : wireless maximum communication

B : worldwide interoperability for microwave access

**C : worldwide international standard for microwave access**

D : wireless internet maximum communication

**Q.no 21. The frame transmission and collision detection is a continuous process which method is used for this condition**

A : Idle,Captured the channel and sending its Frame, collision detection

**B : Captured the channel and sending its Frame,Idle, collision detection**

C : Idle, collision detection,Captured the channel and sending its Frame

D : Captured the channel and sending its Frame, collision detection,Idle

**Q.no 22. Which of following provides reliable communication?**

**A : TCP**

B : IP

C : UDP

D : All of the above

**Q.no 23. Error control in the data link layer is based on \_\_\_\_\_**

A : hamming code

B : parity generator

C : retransmission of data

D : data duplication

**Q.no 24. In the network HTTP resources are located by \_\_\_\_\_**

A : Uniform resource identifier

B : Unique resource locator

C : Unique resource identifier

D : Union resource locator

**Q.no 25. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 26. In IPv4 layer, datagram is of \_\_\_\_\_**

A : Fixed length

B : Variable length

C : Global length

D : Zero length

**Q.no 27. In FTP protocol, client contacts server using \_\_\_\_ as the transport protocol.**

A : transmission control protocol

B : user datagram protocol

C : datagram congestion control protocol

D : stream control transmission protocol

**Q.no 28. In \_\_ protocol, if no acknowledgement for the sent frame has arrived to the sender, it resends all the outstanding frames.**

A : stop and wait

B : go-Back-N ARQ

C : simplest

**D : selective repeat ARQ**

**Q.no 29. In CSMA the Vulnerable time is**

**A : 38 percent**

B : 36 percent

C : 34 percent

D : 37 percent

**Q.no 30. Which one of the following multimedia formats can not be supported by RTP?**

**A : MPEG-4**

B : MJPEG

C : MPEG

D : TXT

**Q.no 31. What are the Methods to move data through a network of links and switches?**

**A : Packet switching and Line switching**

B : Circuit switching and Line switching

C : Line switching and bit switching

D : Packet switching and Circuit switching

**Q.no 32. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 33. Which of the following protocol is defined in Transport layer?**

A : FTP

B : TCP

C : IP

D : Telnet

**Q.no 34. DHCP \_\_\_\_\_ occur every 60 minutes**

A : Multicast Scope

B : Super Scope

C : Subnet Mask

D : Automatic Backups

**Q.no 35. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

D : 255.255.255.224

**Q.no 36. Which of the following layers is an addition to OSI model when compared with TCP IP model?**

A : Application layer

B : Presentation layer

C : Session layer

D : Session and Presentation layer

**Q.no 37. In the \_\_\_\_\_ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle**

A : nonpersistent

**B : Pure Aloha**

C : CSMA with collision detection

D : CSMA with collision avoidance

**Q.no 38. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A : TCP

**B : IP**

C : UDP

D : DHCP

**Q.no 39. MANET stands for**

A : Wireless ad hoc network

B : Mobile ad hoc network

C : Multiple ad hoc network

**D : Multi advance network**

**Q.no 40. The network layer is concerned with \_\_\_\_\_ of data.**

A : Bits

B : Frames

**C : Packets**

D : Bytes

**Q.no 41. The ASCII encoding of binary data is called**

A : base 64 encoding

**B : base 32 encoding**

C : base 16 encoding

D : base 8 encoding

**Q.no 42. What does the java.net.InetAddress class represent?**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 43. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 44. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 45. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

D : Acknowledgment

**Q.no 46. Which is the correct expression for the length of UDP datagram?**

A : UDP length = IP length – IP header's length

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 47. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

**D : protocol for web pages**

**Q.no 48. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

B : ABM

C : NBM

**D : NRM**

**Q.no 49. In PPP, the default maximum length of the information field is \_\_\_\_\_**

A : 1500 bytes

**B : 15000 bytes**

C : 150 bytes

D : 15 bytes

**Q.no 50. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

A : PAP

B : CHAP

C : SAP

**D : LCP**

**Q.no 51. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 250 frames per second?**

A : 92 frames

B : 368 frames

C : 49 frames

**D : 151 frames**

**Q.no 52. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

**C : internet research task force**

D : internet corporation for assigned names and numbers

**Q.no 53. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

A : Added

B : Removed

C : Rearranged

**D : Modified**

**Q.no 54. In HDLC which frames are used only to transport control information?**

**A : S-Frames**

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 55. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is the total length of the user datagram?**

**A : 24Bytes**

B : 64Bytes

C : 28Bytes

D : 32 Bytes

**Q.no 56. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

**B : 10001**

C : 12001

D : 11001

**Q.no 57. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

B : transport layer

**C : session layer**

D : data link layer

**Q.no 58. Which of the following routing protocol used for network layer design?**

A : Static Routing Algorithm

B : Distance vector routing Protocol

C : Dynamic Routing Algorithm

**D : Hybrid Routing Algorithm**

**Q.no 59. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

**A : 92 frames**

B : 368 frames

C : 276 frames

D : 151 frames

**Q.no 60. The values GET, POST, HEAD etc are specified in \_\_\_\_\_ of HTTP message**

A : Request line

B : Header line

C : Status line

D : Entity body

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**Answer for Question No 1. is a**

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**Answer for Question No 2. is a**

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**Answer for Question No 3. is c**

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**Answer for Question No 4. is c**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is a**

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**Answer for Question No 7. is a**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is b**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is c**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is b**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is c**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is b**

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**Answer for Question No 26. is b**

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**Answer for Question No 27. is a**

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**Answer for Question No 28. is b**

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**Answer for Question No 29. is d**

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**Answer for Question No 30. is d**

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**Answer for Question No 31. is d**

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**Answer for Question No 32. is b**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is d**

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**Answer for Question No 36. is d**

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**Answer for Question No 37. is c**

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**Answer for Question No 38. is a**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is c**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is b**

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**Answer for Question No 43. is d**

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**Answer for Question No 44. is b**

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**Answer for Question No 45. is d**

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**Answer for Question No 46. is a**

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**Answer for Question No 47. is b**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is d**

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**Answer for Question No 51. is c**

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**Answer for Question No 52. is d**

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**Answer for Question No 53. is a**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is c**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is b**

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**Answer for Question No 58. is b**

---

**Answer for Question No 59. is d**

---

**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
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- 5) Specially abled students are allowed 20 minutes extra for examination.
- 6) Do not use pencils to darken answer.
- 7) Use only black/blue ball point pen to darken the appropriate circle.
- 8) No change will be allowed once the answer is marked on OMR Sheet.
- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_**

A : Socket

B : IP Address

**C : Protocol**

D : MAC Address

**Q.no 2. HTTP is \_\_\_\_\_ protocol**

A : transport layer

**B : application layer**

C : network layer

D : data link layer

**Q.no 3. The protocol which is used for defining the legal request and replies is called \_\_\_\_ .**

A : FTP

B : SMTP

C : TCP

**D : HTTP**

**Q.no 4. Application layer protocol defines \_\_\_\_\_**

**A : types of messages exchanged**

B : message unformatted

C : Message Request and Response

D : Message Syntax and Semantics

**Q.no 5. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_**

**A : bits**

B : byes

C : megabytes

D : megabits

**Q.no 6. UTP Cable is used by\_\_\_\_**

**A : 802.3 z**

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 7. Physical or logical arrangement of network is ?**

**A : Topology**

B : Routing

C : Networking

D : Control

**Q.no 8. In TCP, sending and receiving data is done as \_\_\_\_\_**

A : Stream of bytes

B : Sequence of characters

C : Lines of data

D : Packets

**Q.no 9. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

B : IP

C : Physical

D : Subnet Mask

**Q.no 10. Data communication system within a building or campus is \_\_\_\_\_**

A : LAN

B : WAN

C : MAN

D : PAN

**Q.no 11. What is the default port of HTTP?**

A : 20

B : 101

C : 80

D : 60

**Q.no 12. The client in socket programming must know which information?**

A : IP address of Server

B : Port number

C : Both IP address of Server & Port number

D : Only its own IP address

**Q.no 13. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

A : standard

**B : fixed-size**

C : variable-size

D : character

**Q.no 14. The IEEE standard used for wimax technology is**

A : 12.2

**B : 18.4**

C : 36.8

D : 13.5

**Q.no 15. In Active mode FTP, the client initiates both the control and data connections.**

A : true

**B : false**

C : None

D : Can not predict

**Q.no 16. Which topology allow to connect computers including server in a ring?**

A : Star

B : Tree

**C : Ring**

D : LAN

**Q.no 17. \_\_\_\_\_ protocol has no flow or error control.**

**A : simplex**

B : complex

C : duplex

D : half duplex

**Q.no 18. MAC Address is the example of**

A : Transport Layer

**B : Data Link Layer**

C : Application Layer

D : Physical Layer

**Q.no 19. Four twisted pairs cable used by \_\_\_\_\_**

A : 802.3 z

B : 802.3

**C : 802.3 u**

D : 802.11

**Q.no 20. Bytes of data being transferred in each connection are numbered by TCP. These numbers start with a \_\_\_\_\_**

A : Fixed number

B : Random sequence of 0's and 1's

C : One

**D : Sequence of zero's and one's**

**Q.no 21. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.**

**A : Transmission control protocol**

B : User datagram protocol

C : Datagram congestion control protocol

D : Stream control transmission protocol

**Q.no 22. The frame transmission and collision detection is a continuous process which method is used for this condition**

A : Idle,Captured the channel and sending its Frame, collision detection

**B : Captured the channel and sending its Frame,Idle, collision detection**

C : Idle, collision detection,Captured the channel and sending its Frame

D : Captured the channel and sending its Frame, collision detection,Idle

**Q.no 23. Router operates in which layer of OSI Reference Model?**

A : Layer 1 (Physical Layer)

**B : Layer 3 (Network Layer)**

C : Layer 4 (Transport Layer)

D : Layer 7 (Application Layer)

**Q.no 24. In HDLC Normal transfer mode is used for \_\_\_\_\_**

A : only point to point links

B : only point to multipoint links

C : either point to point links or point to multipoint links

**D : both point to point and multipoint links**

**Q.no 25. Communication offered by TCP is \_\_\_\_\_**

**A : Full-duplex**

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 26. Connection establishment in TCP is done by which mechanism?**

A : Flow control

**B : Three-Way Handshaking**

C : Forwarding

D : Synchronization

**Q.no 27. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

**A : sliding window**

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 28. ICMP is primarily used for \_\_\_\_\_**

A : error and diagnostic functions

B : addressing

C : forwarding

D : routing

**Q.no 29. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?**

A : SRTP

B : RTCP

C : RCP

D : RTCT

**Q.no 30. An internet is a \_\_\_\_\_**

A : Collection of WANS

B : Network of networks

C : Collection of LANS

D : Collection of identical LANS and WANS

**Q.no 31. What is the frequency range of IEEE 802.11a standard**

A : 6Mbps

B : 11Mbps

C : 22Mbps

D : 54Mbps

**Q.no 32. Which of the following layers is an addition to OSI model when compared with TCP IP model?**

A : Application layer

B : Presentation layer

C : Session layer

D : Session and Presentation layer

**Q.no 33. In CSMA with collision detection the energy level of channel can have three values: Normal , Zero, and abnormal which of the following is correct sequence**

A : Wired network

B : Wireless Network

C : Wired and Wireless Network

D : Client Server Network

**Q.no 34. A proxy server is used as the computer?**

A : with external access

B : acting as a backup

C : performing file handling

D : accessing user permissions

**Q.no 35. \_\_\_\_ Sets an alias for a host name**

A : DNS Event Logging tab

B : DNS Debug Logging tab

C : DNS CNAME (canonical name)

D : DNS Event and Debug tab

**Q.no 36. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

D : 255.255.255.224

**Q.no 37. What is minimum and maximum payload length of 802.3 frame is**

A : p persistent CSMA with collision avoidance

B : Non persistent CSMA with collision detection

C : 1 persistent CSMA with collision detection

D : Aloha

**Q.no 38. Which network is able to connect and send data to each computer via central hub or switch without looking where the data is sent?**

A : Star

B : Router

C : Bus

D : LAN

**Q.no 39. In version field of IPv4 header, when machine is using some other version of IPv4 then datagram is \_\_\_\_\_**

A : Discarded

B : Accepted

C : Interpreted

D : Interpreted incorrectly

**Q.no 40. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 41. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

B : 8

C : 4

D : 10

**Q.no 42. In HDLC which frames are used only to transport control information?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 43. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 44. Simplex protocol of Data Link Layer works on \_\_\_ channels**

A : noiseless

B : broadband

C : noisy

D : creative

**Q.no 45. What does the java.net.InetAddress class represent?**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 46. The values GET, POST, HEAD etc are specified in \_\_\_\_\_ of HTTP message**

A : Request line

B : Header line

C : Status line

D : Entity body

**Q.no 47. Which of the following statements is TRUE about CSMA with collision detection**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 48. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

C : address resolution protocol

D : Internet Address Chat

**Q.no 49. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

A : SYNC flooding attack

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 50. Which is the correct expression for the length of UDP datagram?**

A : UDP length = IP length – IP header's length

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 51. HDLC supports two types of transfer modes \_\_\_\_\_ and \_\_\_\_\_**

A : normal response mode and abnormal response mode.

B : normal response mode and asynchronous balanced mode.

C : command mode and respond mode

D : synchronous balanced mode and asynchronous balanced mode.

**Q.no 52. In HTTP pipelining \_\_\_\_\_**

A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

**Q.no 53. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

**B : transport layer**

C : session layer

D : data link layer

**Q.no 54. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 55. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

A : PAP

B : CHAP

C : SAP

**D : LCP**

**Q.no 56. Each frame in HDLC protocol may contain up \_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 57. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 58. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 59. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 60. A 4 byte IP address consists of \_\_\_\_\_**

A : only network address

B : only host address

C : network address & host address

D : network address & MAC address

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**Answer for Question No 1. is c**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is d**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is a**

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**Answer for Question No 7. is a**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is b**

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**Answer for Question No 10. is a**

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**Answer for Question No 11. is c**

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**Answer for Question No 12. is c**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is c**

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**Answer for Question No 17. is a**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is c**

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**Answer for Question No 20. is d**

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**Answer for Question No 21. is a**

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**Answer for Question No 22. is b**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is b**

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**Answer for Question No 27. is a**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is a**

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**Answer for Question No 30. is b**

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**Answer for Question No 31. is d**

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**Answer for Question No 32. is d**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is a**

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**Answer for Question No 35. is c**

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**Answer for Question No 36. is d**

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**Answer for Question No 37. is c**

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**Answer for Question No 38. is a**

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**Answer for Question No 39. is a**

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**Answer for Question No 40. is b**

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**Answer for Question No 41. is b**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is a**

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**Answer for Question No 44. is a**

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**Answer for Question No 45. is b**

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**Answer for Question No 46. is a**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is c**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is a**

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**Answer for Question No 53. is b**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is d**

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**Answer for Question No 56. is c**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is b**

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**Answer for Question No 60. is c**

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Seat No -

Total number of questions : 60

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Time : 1hr

Max Marks : 50

N.B

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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. MAC Address is the example of**

A : Transport Layer

**B : Data Link Layer**

C : Application Layer

D : Physical Layer

**Q.no 2. Which of the following can be Software?**

A : Routers

**B : Firewalls**

C : bridge

D : Modems

**Q.no 3. Bytes of data being transferred in each connection are numbered by TCP. These numbers start with a \_\_\_\_\_**

- A : Fixed number
- B : Random sequence of 0's and 1's
- C : One
- D : Sequence of zero's and one's**

**Q.no 4. CSMA is based on the principle of**

- A : p persistent
- B : nonpersistent**
- C : 1 persistent
- D : Persistent

**Q.no 5. \_\_\_\_\_ topology requires a multipoint connection.**

- A : Star
- B : Mesh
- C : Ring
- D : Bus**

**Q.no 6. \_\_\_\_\_ is used in dealing with error detection and error correction**

- A : Samming distance
- B : Hamming distance**
- C : Tamming distance
- D : Spamming distance

**Q.no 7. The location of a resource on the internet is given by its?**

- A : Protocol
- B : URL**
- C : E-mail address
- D : website

**Q.no 8. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

A : Class B

B : Class c

**C : Forwarder**

D : Class D

**Q.no 9. To avoid collisions on wireless networks, \_\_\_\_\_ was invented**

**A : MAC address**

B : IP address

C : port address

D : specific address

**Q.no 10. What is the purpose of the DHCP server?**

A : to provide storage for email

B : to translate URLs to IP addresses

C : to translate IPv4 addresses to MAC addresses

**D : to provide an IP configuration information to hosts**

**Q.no 11. Hardware address is known as \_\_\_\_\_**

A : wireless maximum communication

**B : worldwide interoperability for microwave access**

C : worldwide international standard for microwave access

D : wireless internet maximum communication

**Q.no 12. In point to point protocol \_\_\_\_ field of PPP Frame carries the user data.**

A : flag

**B : payload**

C : Protocol

D : FCS

**Q.no 13. which Displays entries in DNS cache**

A : ipconfig /displaydns

B : ipconfig /flushdns

C : Normal DHCP Scope

D : ipconfig /registerdns

**Q.no 14. An email client needs to know the \_\_\_\_\_ of its initial SMTP server.**

A : IP address

B : MAC address

C : URL

D : Name

**Q.no 15. HDLC protocol resides in \_\_\_ layer**

A : Data Link Layer

B : Application Layer

C : Transport Layer

D : Network Layer

**Q.no 16. Connection Oriented Protocol for end-to-end communication is called**

---

A : Aging

B : IP

C : AIPAA

D : tcp

**Q.no 17. In pure Aloha what is maximum number of retransmission attempts if frame get congested in the channel**

A : Two half

B : One Half

C : Three half

D : Four half

**Q.no 18. In Bluetooth architecture of a piconet can have up to \_\_\_\_\_ stations**

A : 802.3

B : 802.11

C : 802.15

**D : 802.16**

**Q.no 19. \_\_\_\_ protocol has neither flow control nor error control**

A : stop and wait

**B : simplest**

C : easiest

D : ARQ

**Q.no 20. TCP process may not write and read data at the same speed. So we need \_\_\_\_\_ for**

A : Packets

**B : Buffers**

C : Segments

D : Stacks

**Q.no 21. Which of the following is not a congestion policy at network layer?**

**A : Flow Control Policy**

B : Packet Discard Policy

C : Packet Lifetime Management Policy

D : Routing Algorithm

**Q.no 22. What is DHCP snooping?**

**A : techniques applied to ensure the security of an existing DHCP infrastructure**

B : algorithm for DHCP

C : encryption of the DHCP server requests

D : decryption of the DHCP server requests

**Q.no 23. In \_\_ protocol, if no acknowledgement for the sent frame has arrived to the sender, it resends all the outstanding frames.**

A : stop and wait

**B : go-Back-N ARQ**

C : simplest

D : selective repeat ARQ

**Q.no 24. A wireless LAN defined by IEEE 802.11 has categories of frames which are those**

A : 1000 bytes

B : 1200 bytes

C : 1300 bytes

**D : 1500 bytes**

**Q.no 25. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

**C : resource reservation protocol**

D : session initiation protocol

**Q.no 26. Which access method is used for the half duplex approach in fast ethernet**

A : 4B/5B

B : NRZ-I

**C : MLT-3**

D : 8B/6T

**Q.no 27. Which of the following layer of OSI model also called end-to-end layer?**

A : Presentation layer

B : Network layer

C : Session layer

D : Transport layer

**Q.no 28. Size of TCP segment header ranges between \_\_\_\_\_**

A : 16 and 32 bytes

B : 16 and 32 bits

C : 20 and 60 bytes

D : 20 and 60 bits

**Q.no 29. In CSMA with collision detection the energy level of channel can have three values: Normal , Zero, and abnormal which of the following is correct sequence**

A : Wired network

B : Wireless Network

C : Wired and Wireless Network

D : Client Server Network

**Q.no 30. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 31. In CSMA the Vulnerable time is**

A : 38 percent

B : 36 percent

C : 34 percent

D : 37 percent

**Q.no 32. SSH uses \_\_\_\_\_ to authenticate the remote computer.**

A : public-key cryptography

B : private-key cryptography

C : any of public-key or private-key

D : both public-key & private-key

**Q.no 33. Bridge works in which layer of the OSI model?**

A : Application layer

B : Transport layer

C : Network layer

**D : Datalink layer**

**Q.no 34. The data link layer at the receiver site receives a frame from its \_\_\_\_\_ layer, extracts data from the frame, and delivers the data to its \_\_\_\_\_ layer.**

**A : physical, network**

B : physical, Transport

C : Application, network

D : Transport, network

**Q.no 35. Communication offered by TCP is \_\_\_\_\_**

**A : Full-duplex**

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 36. MANET stands for**

A : Wireless ad hoc network

**B : Mobile ad hoc network**

C : Multiple ad hoc network

D : Multi advance network

**Q.no 37. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the**

**values of N given below should not be used if A and B should belong to the same network?**

A : 255.255.255.0

B : 255.255.255.128

C : 255.255.255.192

**D : 255.255.255.224**

**Q.no 38. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

**D : Protocol**

**Q.no 39. Which access method is used by Standard ethernet**

A : Ethernet

**B : FDDI or Fiber Channel**

C : Token Ring

D : ATM

**Q.no 40. In the \_\_\_\_\_ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle**

A : nonpersistent

B : Pure Aloha

**C : CSMA with collision detection**

D : CSMA with collision avoidance

**Q.no 41. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 500 frames per second**

**A : 2msec**

B : 4msec

C : 2sec

D : 4sec

**Q.no 42. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

**C : 38 frames**

D : 156 frames

**Q.no 43. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

**B : 10001**

C : 12001

D : 11001

**Q.no 44. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

**D : Acknowledgment**

**Q.no 45. In PPP, the \_\_\_\_\_ is responsible for establishing, maintaining, configuring, and terminating links.**

A : PAP

B : CHAP

C : SAP

D : LCP

**Q.no 46. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 47. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

C : NRM

D : ABM

**Q.no 48. HDLC supports two types of transfer modes \_\_\_\_\_ and \_\_\_\_\_**

A : normal response mode and abnormal response mode.

B : normal response mode and asynchronous balanced mode.

C : command mode and respond mode

D : synchronous balanced mode and asynchronous balanced mode.

**Q.no 49. Simplex protocol of Data Link Layer works on \_\_\_ channels**

A : noiseless

B : broadband

C : noisy

D : creative

**Q.no 50. Which of the following statements is TRUE about CSMA with collision detection**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 51. \_\_\_ refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.**

A : Flow control

B : Speed control

C : Error control

D : Data control

**Q.no 52. Which is the correct expression for the length of UDP datagram?**

A : UDP length = IP length – IP header's length

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 53. a character-oriented approach and a bit-oriented approaches used in which type of framing?**

A : fixed size

B : zero size

C : variable-size

D : cells

**Q.no 54. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 55. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

**D : 151 frames**

**Q.no 56. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

**B : ABM**

C : NBM

D : NRM

**Q.no 57. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

**A : each station can send both commands and respond to commands**

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 58. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 250 frames per second**

A : 92 frames

B : 368 frames

**C : 49 frames**

D : 151 frames

**Q.no 59. What does the java.net.InetAddress class represent?**

A : Socket

**B : IP Address**

C : Protocol

D : MAC Address

**Q.no 60. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

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**Answer for Question No 1. is b**

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**Answer for Question No 2. is b**

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**Answer for Question No 3. is d**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is d**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is c**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is d**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is b**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is a**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is d**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is d**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is b**

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**Answer for Question No 21. is a**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is c**

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**Answer for Question No 26. is c**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is c**

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**Answer for Question No 29. is b**

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**Answer for Question No 30. is b**

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**Answer for Question No 31. is d**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is d**

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**Answer for Question No 34. is a**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is d**

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**Answer for Question No 38. is d**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is c**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is c**

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**Answer for Question No 43. is b**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is d**

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**Answer for Question No 46. is b**

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**Answer for Question No 47. is c**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is a**

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**Answer for Question No 52. is a**

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**Answer for Question No 53. is c**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is d**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is a**

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**Answer for Question No 58. is c**

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**Answer for Question No 59. is b**

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**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

## 12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
- 3) Use of calculator is allowed.
- 4) Each question carries 1 Mark.
- 5) Specially abled students are allowed 20 minutes extra for examination.
- 6) Do not use pencils to darken answer.
- 7) Use only black/blue ball point pen to darken the appropriate circle.
- 8) No change will be allowed once the answer is marked on OMR Sheet.
- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. Connection Oriented Protocol for end-to-end communication is called**

A : Aging

B : IP

C : AIPAA

**D : tcp**

**Q.no 2. How many versions available of IP?**

A : 6 version

B : 4 version

**C : 2 version**

D : 1 version

**Q.no 3. DNS is the abbreviation of**

- A : Dynamic Name System
- B : Dynamic Network System
- C : Domain Name System**
- D : Domain Network Service

**Q.no 4. HTTP is \_\_\_\_\_ protocol**

- A : transport layer
- B : application layer**
- C : network layer
- D : data link layer

**Q.no 5. In \_\_\_\_\_ framing, there is no need for defining the boundaries of frames.**

- A : standard
- B : fixed-size**
- C : variable-size
- D : character

**Q.no 6. Retransmission of packets must not be done when \_\_\_\_\_**

- A : Packet is lost
- B : Packet is corrupted
- C : Packet is needed
- D : Packet is error-free**

**Q.no 7. CSMA is based on the principle of**

- A : p persistent
- B : nonpersistent**
- C : 1 persistent
- D : Persistent

**Q.no 8. WiMAX stands for \_\_\_\_\_**

A : Data Link

B : Network

C : Physical

D : Transport

**Q.no 9. The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as \_\_\_\_\_**

A : Admission policy

B : Backpressure

C : Forward signaling

D : Backward signaling

**Q.no 10. The Maximum throughput for pure aloha is\_\_\_\_ percent**

A : CSMA with collision detection

B : CSMA with collision avoidance

C : Pure Aloha

D : Slotted Aloha

**Q.no 11. In Active mode FTP, the client initiates both the control and data connections.**

A : true

B : false

C : None

D : Can not predict

**Q.no 12. A local telephone network is an example of a \_\_\_\_\_ network.**

A : Packet switched

B : Circuit switched

C : Bit switched

D : Line switched

**Q.no 13. When a host on network A sends a message to a host on network B, which address does the router look at?**

A : Port

B : IP

C : Physical

D : Subnet Mask

**Q.no 14. FTP server listens for connection on port number \_\_\_\_\_**

A : 20

B : 21

C : 22

D : 23

**Q.no 15. Which topology used by CSMA with collision detection**

A : MAC address

B : IP address

C : port address

D : specific address

**Q.no 16. Layer-2 Switch is also called**

A : Multiport Hub

B : Multiport Switch

C : Multiport Bridge

D : Multiport NIC

**Q.no 17. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as \_\_\_\_\_**

A : Flow control

B : Error control

C : Congestion control

D : Error detection

**Q.no 18. Which of the following is not the Networking Devices?**

A : Gateways

B : Linux

C : Routers

D : Firewalls

**Q.no 19. A \_\_ error means that 2 or more bits in the data unit have changed.**

A : unibit

B : burst

C : channel

D : noisy

**Q.no 20. Which of the following can be Software?**

A : Routers

B : Firewalls

C : bridge

D : Modems

**Q.no 21. In HDLC which frames are used to transport user data and control information relating to user data (piggybacking)?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 22. In IPv4 layer, datagram is of \_\_\_\_\_**

A : Fixed length

B : Variable length

C : Global length

D : Zero length

**Q.no 23. What is routing algorithm used by OSPF routing protocol?**

A : Distance vector

B : Flooding

C : Path vector

**D : Link state**

**Q.no 24. There are \_\_\_ types of HDLC frames**

A : 2

B : 4

C : 5

**D : 3**

**Q.no 25. The meaning of Straight-through Cable is**

**A : Four wire pairs connect to the same pin on each end**

B : The cable Which Directly connects Computer to Computer

C : Four wire pairs not twisted with each other

D : The cable which is not twisted

**Q.no 26. Repeater operates in which layer of the OSI model?**

**A : Physical layer**

B : Data link layer

C : Network layer

D : Transport layer

**Q.no 27. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

D : Packet switching and Circuit switching

**Q.no 28. Which protocol gives a full route table update every 30 seconds?**

A : IEGRP

B : RIP

C : ICMP

D : IP

**Q.no 29. DHCP \_\_\_\_\_ occur every 60 minutes**

A : Multicast Scope

B : Super Scope

C : Subnet Mask

D : Automatic Backups

**Q.no 30. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

B : Source address

C : Time to Live (TTL)

D : Length

**Q.no 31. Which of following provides reliable communication?**

A : TCP

B : IP

C : UDP

D : All of the above

**Q.no 32. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

B : 67

C : 68

D : 69

**Q.no 33. The data link layer at the receiver site receives a frame from its \_\_\_ layer, extracts data from the frame, and delivers the data to its \_\_\_ layer.**

A : physical, network

B : physical, Transport

C : Application, network

D : Transport, network

**Q.no 34. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

A : sliding window

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 35. Find the FTP reply whose message is wrongly matched.**

A : 331 – Username OK, password required

B : 425 – Can't open data connection

C : 452 – Error writing file

D : 452 – Can't open data connection

**Q.no 36. A connection in SCTP is called an \_\_\_\_\_**

A : negotiation

B : association

C : transmission

D : reception

**Q.no 37. Which of the following fields in IPV4 datagram is not related to fragmentation?**

A : Type of service

B : Fragment offset

C : Flags

D : Identification

**Q.no 38. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

**C : resource reservation protocol**

D : session initiation protocol

**Q.no 39. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is \_\_\_\_\_**

A : Mutual open

B : Mutual Close

**C : Simultaneous open**

D : Simultaneous close

**Q.no 40. \_\_\_\_\_ Sets an alias for a host name**

A : DNS Event Logging tab

B : DNS Debug Logging tab

**C : DNS CNAME (canonical name)**

D : DNS Event and Debug tab

**Q.no 41. Simplex protocol of Data Link Layer works on \_\_\_\_\_ channels**

**A : noiseless**

B : broadband

C : noisy

D : creative

**Q.no 42. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 43. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

D : Simplex

**Q.no 44. The \_\_\_\_\_ Protocol, adds a simple error control mechanism to the \_\_\_\_\_ Protocol.**

A : Selective Repeat ARQ; Go-Back-N ARQ

B : Go-Back-N ARQ; Stop-and-Wait

C : Stop-and-Wait ARQ; Go-Back-N ARQ

D : Stop-and-Wait ARQ; Stop-and-Wait

**Q.no 45. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

D : internet corporation for assigned names and numbers

**Q.no 46. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

D : 128.64.0.0

**Q.no 47. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 48. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

**B : 8**

C : 4

D : 10

**Q.no 49. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

**B : 10001**

C : 12001

D : 11001

**Q.no 50. HDLC supports two types of transfer modes \_\_\_\_\_ and \_\_\_\_\_**

A : normal response mode and abnormal response mode.

**B : normal response mode and asynchronous balanced mode.**

C : command mode and respond mode

D : synchronous balanced mode and asynchronous balanced mode.

**Q.no 51. MIME uses the same \_\_\_\_\_ format**

**A : RFC822**

B : RFC 800

C : Ethernet

D : RFC 1521

**Q.no 52. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

**D : 151 frames**

**Q.no 53. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps What is the requirement to make this frame collision free**

A : multicast address

B : Broadcast address

**C : Unicast address**

D : Anycast address

**Q.no 54. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_**

**A : Added**

B : Removed

C : Rearranged

D : Modified

**Q.no 55. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

**C : 38 frames**

D : 156 frames

**Q.no 56. In HTTP pipelining \_\_\_\_\_**

A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

**Q.no 57. \_\_\_\_ is a bit oriented protocol for communication over point to point and multipoint links.**

A : High level Data link Control (HDLC)

B : Highest level Data link Control (HDLC)

C : Hyper Text Transfer Protocol (HTTP)

D : Domain Name Server (DNS) Protocol

**Q.no 58. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 1000 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

D : 151 frames

**Q.no 59. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 60. Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_**

A : 161

B : 123

C : 162

D : 124

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**Answer for Question No 1. is d**

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**Answer for Question No 2. is c**

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**Answer for Question No 3. is c**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is d**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is b**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is b**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is c**

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**Answer for Question No 17. is a**

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**Answer for Question No 18. is b**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is b**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is b**

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**Answer for Question No 23. is d**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is a**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is b**

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**Answer for Question No 29. is d**

---

**Answer for Question No 30. is b**

---

**Answer for Question No 31. is a**

---

**Answer for Question No 32. is b**

---

**Answer for Question No 33. is a**

---

**Answer for Question No 34. is a**

---

**Answer for Question No 35. is d**

---

**Answer for Question No 36. is b**

---

**Answer for Question No 37. is a**

---

**Answer for Question No 38. is c**

---

**Answer for Question No 39. is c**

---

**Answer for Question No 40. is c**

---

**Answer for Question No 41. is a**

---

**Answer for Question No 42. is a**

---

**Answer for Question No 43. is d**

---

**Answer for Question No 44. is d**

---

**Answer for Question No 45. is d**

---

**Answer for Question No 46. is d**

---

**Answer for Question No 47. is a**

---

**Answer for Question No 48. is b**

---

**Answer for Question No 49. is b**

---

**Answer for Question No 50. is b**

---

**Answer for Question No 51. is a**

---

**Answer for Question No 52. is d**

---

**Answer for Question No 53. is c**

---

**Answer for Question No 54. is a**

---

**Answer for Question No 55. is c**

---

**Answer for Question No 56. is a**

---

**Answer for Question No 57. is a**

---

**Answer for Question No 58. is b**

---

**Answer for Question No 59. is d**

---

**Answer for Question No 60. is b**

---

Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
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---

**Q.no 1. Which of the following is false with respect to TCP?**

- A : Connection-oriented  
B : Process-to-process  
C : Transport layer protocol  
**D : Unreliable**

**Q.no 2. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_ can access the network.**

- A : MAC Address  
B : IP Address  
**C : MAC and IP address**  
D : MAC or IP address

**Q.no 3. MPLS stands for**

A : Multiprotocol Label Switching

B : Multiple links

C : Mobile protocol links

D : Multiple layer switching

**Q.no 4. In Active mode FTP, the client initiates both the control and data connections.**

A : true

B : false

C : None

D : Can not predict

**Q.no 5. Data communication system spanning states, countries, or the whole world is \_\_\_\_\_**

A : LAN

B : WAN

C : MAN

D : PAN

**Q.no 6. \_\_\_\_\_ protocol has neither flow control nor error control**

A : stop and wait

B : simplest

C : easiest

D : ARQ

**Q.no 7. The network layer protocol for internet is \_\_\_\_\_**

A : ethernet

B : Internet protocol

C : hypertext transfer protocol

D : file transfer protocol

**Q.no 8. The location of a resource on the internet is given by its?**

A : Protocol

B : URL

C : E-mail address

D : website

**Q.no 9. WAN stands for \_\_\_\_\_**

A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 10. RTP provides the facility of jitter \_\_\_\_\_**

A : media stream

B : expansion

C : media modification

D : security

**Q.no 11. RSVP is a \_\_\_\_\_ oriented protocol**

A : receiver

B : bit

C : byte

D : both b & c

**Q.no 12. What is the purpose of the DHCP server?**

A : to provide storage for email

B : to translate URLs to IP addresses

C : to translate IPv4 addresses to MAC addresses

D : to provide an IP configuration information to hosts

**Q.no 13. WiMAX stands for \_\_\_\_\_**

A : Data Link

B : Network

C : Physical

D : Transport

**Q.no 14. UTP Cable is used by\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 15. Physical or logical arrangement of network is ?**

A : Topology

B : Routing

C : Networking

D : Control

**Q.no 16. Which of the following can be Software?**

A : Routers

B : Firewalls

C : bridge

D : Modems

**Q.no 17. TCP process may not write and read data at the same speed. So we need \_\_\_\_\_ for**

A : Packets

B : Buffers

C : Segments

D : Stacks

**Q.no 18. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as \_\_\_\_\_**

A : Flow control

B : Error control

C : Congestion control

D : Error detection

**Q.no 19. Hardware address is known as \_\_\_\_\_**

A : wireless maximum communication

B : worldwide interoperability for microwave access

C : worldwide international standard for microwave access

D : wireless internet maximum communication

**Q.no 20. Ipv6 is how many bits long**

A : 32

B : 48

C : 128

D : 16

**Q.no 21. Which access method is used for the half duplex approach in fast ethernet**

A : 4B/5B

B : NRZ-I

C : MLT-3

D : 8B/6T

**Q.no 22. The size of flag field in HDLC frame is \_\_\_\_\_**

A : 8 bits

B : 4 bits

C : 2 bits

D : 9 bits

**Q.no 23. In CSMA the Vulnerable time is**

A : 38 percent

B : 36 percent

C : 34 percent

**D : 37 percent**

**Q.no 24. Point to Point protocol is \_\_\_ oriented**

A : bit

**B : byte**

C : gigabyte

D : megabyte

**Q.no 25. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_**

A : stream mode

B : block mode

C : compressed mode

**D : message mode**

**Q.no 26. \_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

**A : FDM**

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 27. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client.**

**A : IP address**

B : MAC Address

C : Port Address

D : Physical Address

**Q.no 28. The data link layer pack bits into \_\_\_\_.**

A : segments

B : clusters

C : packets

**D : frames**

**Q.no 29. Which of the following is not a congestion policy at network layer?**

**A : Flow Control Policy**

B : Packet Discard Policy

C : Packet Lifetime Management Policy

D : Routing Algorithm

**Q.no 30. In SCTP, a data chunk is numbered using \_\_\_\_\_**

**A : TSN**

B : SI

C : SSN

D : GSN

**Q.no 31. What is the meaning of Bandwidth in Network?**

**A : Transmission capacity of a communication channels**

B : Connected Computers in the Network

C : Class of IP used in Network

D : Bit per Seconds

**Q.no 32. Which one of the following is not an application layer protocol?**

A : media gateway protocol

B : dynamic host configuration protocol

C : resource reservation protocol

D : session initiation protocol

**Q.no 33. Radio channels are attractive medium because**

A : Can penetrate walls

B : Connectivity can be given to mobile user

C : Can carry signals for long distance

D : All of the mentioned

**Q.no 34. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.**

A : Transmission control protocol

B : User datagram protocol

C : Datagram congestion control protocol

D : Stream control transmission protocol

**Q.no 35. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

C : Stop-and-Wait Protocol

D : Stop Protocol

**Q.no 36. A place where there is a field of signal through which you can access WiFi internet is called –**

A : WiFi Hotspots

B : WiFi Internet

C : WiFi Zone

D : WiFi Range

**Q.no 37. Which Strategies used by CSMA with collision avoidance**

A : 1500 bytes , 46 bytes

B : 46 bytes, 1500 bytes

C : 64 bytes, 1518 bytes

D : 512 bits, 12144 bytes

**Q.no 38. Which of the following address belongs class A?**

A : 121.12.12.248

B : 130.12.12.248

C : 128.12.12.248

D : 129.12.12.248

**Q.no 39. Where should we use default routing?**

A : On stub networks- which have only one exit path out of the network

B : Which have more than one exit path out of the network

C : Minimum five exit paths out of the network

D : Maximum five exit paths out of the network

**Q.no 40. In HDLC which frames are used to transport user data and control information relating to user data (piggybacking)?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 41. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

B : distributed system

C : networking system

D : mail system

**Q.no 42. Three types of HDLC frames are :**

A : Data frames, Supervisory frames, Un-numbered frames

**B : Information frames, Supervisory frames, Un-numbered frames**

C : Information frames, Supervisory frames, Numbered frames

D : Information frames, Controlled frames, Numbered frames

**Q.no 43. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

**D : internet corporation for assigned names and numbers**

**Q.no 44. In HTTP pipelining \_\_\_\_\_**

**A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses**

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

**Q.no 45. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

**D : Byte stuffing**

**Q.no 46. Which of the following statements is TRUE about CSMA with collision detection**

**A : 135 frames**

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 47. a character-oriented approach and a bit-oriented approaches used in which type of framing?**

A : fixed size

B : zero size

**C : variable-size**

D : cells

**Q.no 48. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is the total length of the user datagram?**

A : 24Bytes

B : 64Bytes

**C : 28Bytes**

D : 32 Bytes

**Q.no 49. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

**B : Transmission control protocol**

C : Border gateway protocol

D : Domain host control protocol

**Q.no 50. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

**A : Multicast home agent**

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 51. What is on-demand mail relay (ODMR)?**

A : protocol for SMTP security

B : an SMTP extension

C : protocol for faster mail transfer

D : protocol for web pages

**Q.no 52. Which of the following routing protocol used for network layer design?**

A : Static Routing Algorithm

B : Distance vector routing Protocol

C : Dynamic Routing Algorithm

D : Hybrid Routing Algorithm

**Q.no 53. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

C : address resolution protocol

D : Internet Address Chat

**Q.no 54. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

A : SYNC flooding attack

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 55. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

B : ABM

C : NBM

D : NRM

**Q.no 56. In PPP, the default maximum length of the information field is \_\_\_\_\_**

A : 1500 bytes

B : 15000 bytes

C : 150 bytes

D : 15 bytes

**Q.no 57. Peer-to-peer processes are processes on two or more devices communicating at a**

A : same layer

B : different layer

C : different layer on different device

D : none of above

**Q.no 58. The ASCII encoding of binary data is called**

A : base 64 encoding

B : base 32 encoding

C : base 16 encoding

D : base 8 encoding

**Q.no 59. In \_\_\_\_\_, the station configuration is unbalanced. We have one primary station and multiple secondary stations.**

A : ARM

B : NBM

C : NRM

D : ABM

**Q.no 60. The process of modifying IP address information in IP packet headers while in transit across a traffic routing device is called**

A : Port address translation (PAT)

B : Network address translation (NAT)

C : Address mapping

D : Port mapping

---

**Answer for Question No 1. is d**

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**Answer for Question No 2. is c**

---

**Answer for Question No 3. is a**

---

**Answer for Question No 4. is b**

---

**Answer for Question No 5. is b**

---

**Answer for Question No 6. is b**

---

**Answer for Question No 7. is b**

---

**Answer for Question No 8. is b**

---

**Answer for Question No 9. is b**

---

**Answer for Question No 10. is a**

---

**Answer for Question No 11. is a**

---

**Answer for Question No 12. is d**

---

**Answer for Question No 13. is a**

---

**Answer for Question No 14. is a**

---

**Answer for Question No 15. is a**

---

**Answer for Question No 16. is b**

---

**Answer for Question No 17. is b**

---

**Answer for Question No 18. is a**

---

**Answer for Question No 19. is b**

---

**Answer for Question No 20. is c**

---

**Answer for Question No 21. is c**

---

**Answer for Question No 22. is a**

---

**Answer for Question No 23. is d**

---

**Answer for Question No 24. is b**

---

**Answer for Question No 25. is d**

---

**Answer for Question No 26. is a**

---

**Answer for Question No 27. is a**

---

**Answer for Question No 28. is d**

---

**Answer for Question No 29. is a**

---

**Answer for Question No 30. is a**

---

**Answer for Question No 31. is a**

---

**Answer for Question No 32. is c**

---

**Answer for Question No 33. is d**

---

**Answer for Question No 34. is a**

---

**Answer for Question No 35. is c**

---

**Answer for Question No 36. is a**

---

**Answer for Question No 37. is b**

---

**Answer for Question No 38. is a**

---

**Answer for Question No 39. is a**

---

**Answer for Question No 40. is b**

---

**Answer for Question No 41. is b**

---

**Answer for Question No 42. is b**

---

**Answer for Question No 43. is d**

---

**Answer for Question No 44. is a**

---

**Answer for Question No 45. is d**

---

**Answer for Question No 46. is a**

---

**Answer for Question No 47. is c**

---

**Answer for Question No 48. is c**

---

**Answer for Question No 49. is b**

---

**Answer for Question No 50. is a**

---

**Answer for Question No 51. is b**

---

**Answer for Question No 52. is b**

---

**Answer for Question No 53. is c**

---

**Answer for Question No 54. is a**

---

**Answer for Question No 55. is b**

---

**Answer for Question No 56. is a**

---

**Answer for Question No 57. is a**

---

**Answer for Question No 58. is a**

---

**Answer for Question No 59. is c**

---

**Answer for Question No 60. is b**

---

Seat No -

Total number of questions : 60

## 12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
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- 10) Darken ONLY ONE CIRCLE for each answer.

### **Q.no 1. Routing tables of a router keeps track of**

A : MAC Address Assignments

B : Port Assignments to network devices

C : Distribute IP address to network devices

**D : Routes to use for forwarding data to its destination**

### **Q.no 2. Physical or logical arrangement of network is ?**

**A : Topology**

B : Routing

C : Networking

D : Control

**Q.no 3. Name server designated as the recipient of forwarded queries is known as \_\_\_\_\_**

A : Class B

B : Class c

**C : Forwarder**

D : Class D

**Q.no 4. Protocols are set of rules to govern \_\_\_\_\_**

**A : Communication**

B : Standard

C : Metropolitan communication

D : Bandwidth

**Q.no 5. CSMA is based on the principle of**

A : p persistent

**B : nonpersistent**

C : 1 persistent

D : Persistent

**Q.no 6. Which of the following can be Software?**

A : Routers

**B : Firewalls**

C : bridge

D : Modems

**Q.no 7. Which of the following is false with respect to TCP?**

A : Connection-oriented

B : Process-to-process

C : Transport layer protocol

**D : Unreliable**

**Q.no 8. Which Method can be used for to reduce the collision but canot eliminate it**

A : Listen before talk

B : Listen after talk

C : Sense after transmit

D : Sense before talk

**Q.no 9. OSPF stands for**

A : Open short distance protocol

B : on demand sequence protocol

C : Open shortest path first

D : Open sequence protocol first

**Q.no 10. \_\_\_\_\_ allows the receiver to inform the sender of any frames lost or damaged in transmission and coordinates the retransmission of those frames by the sender.**

A : Error control

B : data control

C : Transmission Control

D : Speed control

**Q.no 11. Connection Oriented Protocol for end-to-end communication is called**

---

A : Aging

B : IP

C : AIPAA

D : tcp

**Q.no 12. Which of the following is false with respect to UDP?**

A : Connection-oriented

B : Unreliable

C : Transport layer protocol

D : Low overhead

**Q.no 13. The Maximum throughput for pure aloha is\_\_\_\_ percent**

A : CSMA with collision detection

**B : CSMA with collision avoidance**

C : Pure Aloha

D : Slotted Aloha

**Q.no 14. How many layers are in the TCP/IP model?**

A : 4 layers

**B : 5 layers**

C : 6 layers

D : 7 layers

**Q.no 15. An email client needs to know the \_\_\_\_\_ of its initial SMTP server.**

A : IP address

B : MAC address

C : URL

D : Name

**Q.no 16. RSVP is a \_\_\_\_\_ oriented protocol**

**A : receiver**

B : bit

C : byte

D : both b & c

**Q.no 17. Modulator and demodulator as combinely is known as –**

A : Modulus

**B : Modem**

C : Mod switch

D : Mod access

**Q.no 18. In a bit-oriented protocol, the data section of a frame is a sequence of \_\_\_\_\_**

A : bits

B : byes

C : megabytes

D : megabits

**Q.no 19. BGP stands for**

A : Bypass gateway protocol

B : Border gateway protocol

C : Bootstrap Protocol

D : Boundary gateway protocol

**Q.no 20. DHCP is used for \_\_\_\_\_**

A : IPv6

B : IPv4

C : Both IPv6 and IPv4

D : IPv6 or IPv4

**Q.no 21. Standard ethernet use which topologies**

A : CSMA with collision avoidance

B : Pure Aloha

C : Slotted Aloha

D : CSMA with collision detection

**Q.no 22. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_**

A : sliding window

B : sliding frame

C : sliding packet

D : sliding door

**Q.no 23. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

**B : Source address**

C : Time to Live (TTL)

D : Length

**Q.no 24. Which access method is used by Standard ethernet**

A : Ethernet

**B : FDDI or Fiber Channel**

C : Token Ring

D : ATM

**Q.no 25. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?**

**A : SRTP**

B : RTCP

C : RCP

D : RTCT

**Q.no 26. Radio channels are attractive medium because**

A : Can penetrate walls

B : Connectivity can be given to mobile user

C : Can carry signals for long distance

**D : All of the mentioned**

**Q.no 27. In HDLC which frames are used to transport user data and control information relating to user data (piggybacking)?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 28. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

**D : Packet switching and Circuit switching**

**Q.no 29. In \_\_ protocol, if no acknowledgement for the sent frame has arrived to the sender, it resends all the outstanding frames.**

A : stop and wait

**B : go-Back-N ARQ**

C : simplest

D : selective repeat ARQ

**Q.no 30. The network layer is concerned with \_\_\_\_\_ of data.**

A : Bits

B : Frames

**C : Packets**

D : Bytes

**Q.no 31. Which of the following is not a congestion policy at network layer?**

**A : Flow Control Policy**

B : Packet Discard Policy

C : Packet Lifetime Management Policy

D : Routing Algorithm

**Q.no 32. Repeater operates in which layer of the OSI model?**

A : Physical layer

B : Data link layer

C : Network layer

D : Transport layer

**Q.no 33. Which of this is not a guided media ?**

A : Fiber optical cable

B : Coaxial cable

C : Wireless LAN

D : Copper wire

**Q.no 34. Communication offered by TCP is \_\_\_\_\_**

A : Full-duplex

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 35. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A : TCP

B : IP

C : UDP

D : DHCP

**Q.no 36. Coaxial cable consists of \_\_\_\_\_ concentric copper conductors.**

A : 1

B : 2

C : 3

D : 4

**Q.no 37. What is the use of Bridge in Network?**

A : to connect LANs

B : to separate LANs

C : to control Network Speed

D : to connect LAN to WAN

**Q.no 38. Size of TCP segment header ranges between \_\_\_\_\_**

A : 16 and 32 bytes

B : 16 and 32 bits

**C : 20 and 60 bytes**

D : 20 and 60 bits

**Q.no 39. The DHCP server \_\_\_\_\_**

A : maintains a database of available IP addresses

B : maintains the information about client configuration parameters

C : grants a IP address when receives a request from a client

**D : Maintains a database of IP address, information about client configuration and grants IP address**

**Q.no 40. What is routing algorithm used by OSPF routing protocol?**

A : Distance vector

B : Flooding

C : Path vector

**D : Link state**

**Q.no 41. \_\_\_\_\_ is a bit oriented protocol for communication over point to point and multipoint links.**

**A : High level Data link Control (HDLC)**

B : Highest level Data link Control (HDLC)

C : Hyper Text Transfer Protocol (HTTP)

D : Domain Name Server (DNS) Protocol

**Q.no 42. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

A : Point - to - Point Protocol (PPP)

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 43. Which of the following is correct IPv4 address?**

A : 124.201.3.1.52

B : 300.142.210.64

C : 10110011.32.16.8

D : 128.64.0.0

**Q.no 44. Simplex protocol of Data Link Layer works on \_\_\_\_ channels**

A : noiseless

B : broadband

C : noisy

D : creative

**Q.no 45. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

B : physical layer

C : data link layer

D : transport layer

**Q.no 46. The port number is “ephemeral port number”, if the source host is \_\_\_\_\_**

A : NTP

B : Echo

C : Server

D : Client

**Q.no 47. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps What is the requirement to make this frame collision free**

A : multicast address

B : Broadcast address

**C : Unicast address**

D : Anycast address

**Q.no 48. Beyond IP, UDP provides additional services such as \_\_\_\_\_**

A : Routing and switching

B : Sending and receiving of packets

C : Multiplexing and demultiplexing

**D : Demultiplexing and error checking**

**Q.no 49. Network congestion occurs \_\_\_\_\_**

**A : in case of traffic overloading**

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 50. In HDLC which frames are used only to transport control information?**

**A : S-Frames**

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 51. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces 1000 frames per second**

A : 92 frames

**B : 368 frames**

C : 276 frames

D : 151 frames

**Q.no 52. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is the total length of the user datagram?**

A : 24Bytes

B : 64Bytes

**C : 28Bytes**

D : 32 Bytes

**Q.no 53. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 250 frames per second**

A : 92 frames

B : 368 frames

**C : 49 frames**

D : 151 frames

**Q.no 54. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

**B : ABM**

C : NBM

D : NRM

**Q.no 55. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

**A : SYNC flooding attack**

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 56. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

**B : transport layer**

C : session layer

D : data link layer

**Q.no 57. A 4 byte IP address consists of \_\_\_\_\_**

A : only network address

B : only host address

**C : network address & host address**

D : network address & MAC address

**Q.no 58. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

**A : Application layer**

B : Transport layer

C : Link layer

D : Session layer

**Q.no 59. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_**

A : internet architecture board

B : internet society

C : internet research task force

**D : internet corporation for assigned names and numbers**

**Q.no 60. Which one of the following algorithm is not used for congestion control?**

A : traffic aware routing

B : admission control

C : load shedding

D : routing information protocol

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**Answer for Question No 1. is d**

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**Answer for Question No 2. is a**

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**Answer for Question No 3. is c**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is d**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is c**

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**Answer for Question No 10. is a**

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**Answer for Question No 11. is d**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is a**

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**Answer for Question No 16. is a**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is c**

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**Answer for Question No 21. is d**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is b**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is b**

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**Answer for Question No 28. is d**

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**Answer for Question No 29. is b**

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**Answer for Question No 30. is c**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is c**

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**Answer for Question No 34. is a**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is a**

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**Answer for Question No 38. is c**

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**Answer for Question No 39. is d**

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**Answer for Question No 40. is d**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is a**

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**Answer for Question No 43. is d**

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**Answer for Question No 44. is a**

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**Answer for Question No 45. is b**

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**Answer for Question No 46. is d**

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**Answer for Question No 47. is c**

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**Answer for Question No 48. is d**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is a**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is c**

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**Answer for Question No 53. is c**

---

**Answer for Question No 54. is b**

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**Answer for Question No 55. is a**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is d**

---

**Answer for Question No 60. is d**

---

Seat No -

Total number of questions : 60

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Time : 1hr

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- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. Which one of the following is TRUE about interior Gateway routing protocols - Routing Information Protocol (RIP) and Open Shortest Path First (OSPF)**

A : RIP uses distance vector routing and OSPF uses link state routing

B : OSPF uses distance vector routing and RIP uses link state routing

C : Both RIP and OSPF use link state routing

D : Both RIP and OSPF use distance vector routing

**Q.no 2. Retransmission of packets must not be done when \_\_\_\_\_**

A : Packet is lost

B : Packet is corrupted

C : Packet is needed

**D : Packet is error-free**

**Q.no 3. The network layer protocol for internet is \_\_\_\_\_**

A : ethernet

**B : Internet protocol**

C : hypertext transfer protocol

D : file transfer protocol

**Q.no 4. Stream Control Transmission Protocol (SCTP) is a new \_\_\_\_\_ protocol.**

A : reliable, character-oriented

**B : reliable, message-oriented**

C : unreliable, message-oriented

D : unreliable, byte-oriented

**Q.no 5. A \_\_\_\_\_ set of rules that governs data communication.**

**A : Protocols**

B : Standards

C : RFCs

D : Servers

**Q.no 6. Static Channel Allocation is used in which technologies**

A : SAN

B : PAN

**C : LAN and MAN**

D : WAN

**Q.no 7. CIDR stands for**

**A : Classless Inter-Domain Routing**

B : Classless Intra-Domain Routing

C : Classful Inter-Domain Routing

D : Classful Intra-Domain Routing

**Q.no 8. \_\_\_\_\_ is used in dealing with error detection and error correction**

A : Samming distance

**B : Hamming distance**

C : Tamming distance

D : Spamming distance

**Q.no 9. Data communication system within a building or campus is\_\_\_\_\_**

**A : LAN**

B : WAN

C : MAN

D : PAN

**Q.no 10. HTTP is \_\_\_\_\_ protocol**

A : transport layer

**B : application layer**

C : network layer

D : data link layer

**Q.no 11. A local telephone network is an example of a \_\_\_\_\_ network.**

A : Packet switched

**B : Circuit switched**

C : Bit switched

D : Line switched

**Q.no 12. Which of the following is an example of Personal Area Networking?**

**A : Bluetooth**

B : WAN

C : WLAN

D : LAN

**Q.no 13. In Active mode FTP, the client initiates both the control and data connections.**

A : true

B : false

C : None

D : Can not predict

**Q.no 14. The location of a resource on the internet is given by its?**

A : Protocol

B : URL

C : E-mail address

D : website

**Q.no 15. Modulator and demodulator as combinely is known as –**

A : Modulus

B : Modem

C : Mod switch

D : Mod access

**Q.no 16. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_ can access the network.**

A : MAC Address

B : IP Address

C : MAC and IP address

D : MAC or IP address

**Q.no 17. MAC Address is the example of**

A : Transport Layer

B : Data Link Layer

C : Application Layer

D : Physical Layer

**Q.no 18. In which method is used for large waiting time or backoff time**

A : Bus

B : star

C : Ring

D : Mesh

**Q.no 19. The control information in SCTP is included in the \_\_\_\_\_**

A : header control field

B : control chunks

C : data chunks

D : Trailer Control field

**Q.no 20. The Maximum throughput for pure aloha is\_\_\_\_ percent**

A : CSMA with collision detection

B : CSMA with collision avoidance

C : Pure Aloha

D : Slotted Aloha

**Q.no 21. What is routing algorithm used by OSPF routing protocol?**

A : Distance vector

B : Flooding

C : Path vector

D : Link state

**Q.no 22. In version field of IPv4 header, when machine is using some other version of IPv4 then datagram is \_\_\_\_\_**

A : Discarded

B : Accepted

C : Interpreted

D : Interpreted incorrectly

**Q.no 23. In the network HTTP resources are located by**

A : uniform resource identifier

B : unique resource locator

C : unique resource identifier

D : union resource locator

**Q.no 24. The DHCP server \_\_\_\_\_**

A : maintains a database of available IP addresses

B : maintains the information about client configuration parameters

C : grants a IP address when receives a request from a client

D : Maintains a database of IP address, information about client configuration and grants IP address

**Q.no 25. Which of the following network device has the slowest type of connection?**

A : DSL

B : Router

C : Bridges

D : Dial-up modems

**Q.no 26. Error control in the data link layer is based on \_\_\_\_\_**

A : hamming code

B : parity generator

C : retransmission of data

D : data duplication

**Q.no 27. In which protocol sender sends one frame, stops until it receives confirmation from the receiver?**

A : MQTT protocol

B : Wait Protocol

C : Stop-and-Wait Protocol

D : Stop Protocol

**Q.no 28. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.**

A : FDM

B : TDM

C : Both FDM & TDM

D : PDM

**Q.no 29. In IPv4 layer, datagram is of \_\_\_\_\_**

A : Fixed length

B : Variable length

C : Global length

D : Zero length

**Q.no 30. In byte stuffing (or character stuffing), a special byte known as \_\_\_\_\_ is added to the data section of the frame when there is a character with the same pattern as the flag.**

A : excuse character

B : entry character

C : exit character

D : escape character

**Q.no 31. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.**

A : Transmission control protocol

B : User datagram protocol

C : Datagram congestion control protocol

D : Stream control transmission protocol

**Q.no 32. Which of the following address belongs class A?**

A : 121.12.12.248

B : 130.12.12.248

C : 128.12.12.248

D : 129.12.12.248

**Q.no 33. SSH uses \_\_\_\_\_ to authenticate the remote computer.**

A : public-key cryptography

B : private-key cryptography

C : any of public-key or private-key

D : both public-key & private-key

**Q.no 34. The frame transmission and collision detection is a continuous process which method is used for this condition**

A : Idle,Captured the channel and sending its Frame, collision detection

B : Captured the channel and sending its Frame,Idle, collision detection

C : Idle, collision detection,Captured the channel and sending its Frame

D : Captured the channel and sending its Frame, collision detection,Idle

**Q.no 35. In the \_\_\_\_\_ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle**

A : nonpersistent

B : Pure Aloha

C : CSMA with collision detection

D : CSMA with collision avoidance

**Q.no 36. Which one of the following is not a function of network layer?**

A : routing

B : inter-networking

C : congestion control

D : error control

**Q.no 37. Communication offered by TCP is \_\_\_\_\_**

A : Full-duplex

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 38. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A : TCP

B : IP

C : UDP

D : DHCP

**Q.no 39. A proxy server is used as the computer?**

A : with external access

B : acting as a backup

C : performing file handling

D : accessing user permissions

**Q.no 40. Which of the following is not a congestion policy at network layer?**

A : Flow Control Policy

B : Packet Discard Policy

C : Packet Lifetime Management Policy

D : Routing Algorithm

**Q.no 41. Peer-to-peer processes are processes on two or more devices communicating at a**

A : same layer

B : different layer

C : different layer on different device

D : none of above

**Q.no 42. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 500 frames per second**

A : 92 frames

B : 368 frames

C : 276 frames

**D : 151 frames**

**Q.no 43. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

**C : address resolution protocol**

D : Internet Address Chat

**Q.no 44. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is the total length of the user datagram?**

A : 24Bytes

B : 64Bytes

C : 28Bytes

**D : 32 Bytes**

**Q.no 45. \_\_\_\_\_ is a communication protocol of the data link layer that is used to transmit multiprotocol data between two directly connected computers.**

**A : Point - to - Point Protocol (PPP)**

B : Internet Protocol

C : Transmission Control Protocol

D : Single Point - to - Multi Point Protocol (SPM)

**Q.no 46. Beyond IP, UDP provides additional services such as \_\_\_\_\_**

A : Routing and switching

B : Sending and receiving of packets

C : Multiplexing and demultiplexing

D : Demultiplexing and error checking

**Q.no 47. Simplex protocol of Data Link Layer works on \_\_\_\_ channels**

A : noiseless

B : broadband

C : noisy

D : creative

**Q.no 48. Which layer is responsible for process to process delivery in a general network model?**

A : network layer

B : transport layer

C : session layer

D : data link layer

**Q.no 49. \_\_\_\_\_ is responsible for tunneling multicast packets to the Mobile Station's currently subscribed FA.**

A : Multicast home agent

B : Mobile multicast

C : Mobile station

D : Base station

**Q.no 50. Each frame in HDLC protocol may contain up \_\_\_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 51. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_**

A : computer network

**B : distributed system**

C : networking system

D : mail system

**Q.no 52. Transmission data rate is decided by \_\_\_\_\_**

A : network layer

**B : physical layer**

C : data link layer

D : transport layer

**Q.no 53. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?**

A : HTTP

B : FTP

**C : Telnet**

D : TCP

**Q.no 54. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

**A : SYNC flooding attack**

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 55. Which one of the following is correct?**

A : Application layer protocols are used by both source and destination devices during a communication session

B : HTTP is a session layer protocol

C : TCP is an application layer protocol

D : HTTP is a request and response protocol

**Q.no 56. Define the type of the following destination MAC address**

**4A:30:10:21:10:1A**

A : IEEE 802.11 wireless LAN runs CSMA with collision detection protocol

B : Ethernet is not based on CSMA with collision detection protocol

C : CSMA with collision detection is not suitable for a high propagation delay network like satellite network

D : There is no contention in a CSMA with collision detection network

**Q.no 57. A 4 byte IP address consists of \_\_\_\_\_**

A : only network address

B : only host address

C : network address & host address

D : network address & MAC address

**Q.no 58. Network congestion occurs \_\_\_\_\_**

A : in case of traffic overloading

B : when a system terminates

C : when connection between two nodes terminates

D : in case of transfer failure

**Q.no 59. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for \_\_\_\_\_ channels.**

A : signal

B : wireless

C : noisy

D : noiseless

**Q.no 60. In HTTP pipelining \_\_\_\_\_**

A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

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**Answer for Question No 1. is a**

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**Answer for Question No 2. is d**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is b**

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**Answer for Question No 5. is a**

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**Answer for Question No 6. is c**

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**Answer for Question No 7. is a**

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**Answer for Question No 8. is b**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is b**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is b**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is b**

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**Answer for Question No 16. is c**

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**Answer for Question No 17. is b**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is b**

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**Answer for Question No 20. is b**

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**Answer for Question No 21. is d**

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**Answer for Question No 22. is a**

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**Answer for Question No 23. is a**

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**Answer for Question No 24. is d**

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**Answer for Question No 25. is d**

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**Answer for Question No 26. is c**

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**Answer for Question No 27. is c**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is b**

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**Answer for Question No 30. is d**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is a**

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**Answer for Question No 34. is b**

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**Answer for Question No 35. is c**

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**Answer for Question No 36. is d**

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**Answer for Question No 37. is a**

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**Answer for Question No 38. is a**

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**Answer for Question No 39. is a**

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**Answer for Question No 40. is a**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is d**

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**Answer for Question No 43. is c**

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**Answer for Question No 44. is c**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is d**

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**Answer for Question No 47. is a**

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**Answer for Question No 48. is b**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is c**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is b**

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**Answer for Question No 53. is c**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is d**

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**Answer for Question No 56. is c**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is c**

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**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

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---

**Q.no 1. In point to point protocol \_\_\_ field of PPP Frame carries the user data.**

A : flag

**B : payload**

C : Protocol

D : FCS

**Q.no 2. Which network is able to connect to each computer through a common central line?**

**A : Bus**

B : Star

C : router

D : WAN

**Q.no 3. The IEEE standard used for wimax technology is**

A : 12.2

**B : 18.4**

C : 36.8

D : 13.5

**Q.no 4. HDLC protocol resides in \_\_\_ layer**

**A : Data Link Layer**

B : Application Layer

C : Transport Layer

D : Network Layer

**Q.no 5. What is the default port of HTTP?**

A : 20

B : 101

**C : 80**

D : 60

**Q.no 6. Which of the following is not the Networking Devices?**

A : Gateways

**B : Linux**

C : Routers

D : Firewalls

**Q.no 7. Which protocol provides the synchronization between media streams?**

A : RTP

**B : RTCP**

C : RPC

D : RTCT

**Q.no 8. How many versions available of IP?**

A : 6 version

B : 4 version

C : 2 version

D : 1 version

**Q.no 9. Static Channel Allocation is used in which technologies**

A : SAN

B : PAN

C : LAN and MAN

D : WAN

**Q.no 10. When the mail server sends mail to other mail servers it becomes**

A : SMTP server

B : SMTP client

C : Peer

D : Master

**Q.no 11. Data communication system within a building or campus is \_\_\_\_\_**

A : LAN

B : WAN

C : MAN

D : PAN

**Q.no 12. The \_\_\_\_\_ layer of ethernet consist of LLC sublayer and MAC sublayer**

A : Maximum Propagation time  $T_p$

B : Transmission time

C : Back off Time

D : Wait time out time

**Q.no 13. \_\_\_ codes are created to correct errors**

A : bar

B : uni

**C : cyclic**

D : hash

**Q.no 14. CIDR stands for**

**A : Classless Inter-Domain Routing**

B : Classless Intra-Domain Routing

C : Classful Inter-Domain Routing

D : Classful Intra-Domain Routing

**Q.no 15. What is the purpose of the DHCP server?**

A : to provide storage for email

B : to translate URLs to IP addresses

C : to translate IPv4 addresses to MAC addresses

**D : to provide an IP configuration information to hosts**

**Q.no 16. DNS is the abbreviation of**

A : Dynamic Name System

B : Dynamic Network System

**C : Domain Name System**

D : Domain Network Service

**Q.no 17. The client in socket programming must know which information?**

A : IP address of Server

B : Port number

**C : Both IP address of Server & Port number**

D : Only its own IP address

**Q.no 18. UTP Cable is used by\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 19. Layer-2 Switch is also called**

A : Multiport Hub

B : Multiport Switch

**C : Multiport Bridge**

D : Multiport NIC

**Q.no 20. The term IPv4 stands for?**

**A : Internet Protocol Version 4**

B : Internet Programming Version 4

C : International Programming Version 4

D : International Protocol Version 4

**Q.no 21. Which one of the following fields of an IP header is NOT modified by a typical IP router?**

A : Checksum

**B : Source address**

C : Time to Live (TTL)

D : Length

**Q.no 22. The maximum size of payload field in ethernet frame is \_\_\_\_\_**

A : IEEE 802.3

**B : IEEE 802.11**

C : IEEE 802.2

D : IEEE 802.15

**Q.no 23. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

**D : Packet switching and Circuit switching**

**Q.no 24. Which of following provides reliable communication?**

**A : TCP**

B : IP

C : UDP

D : All of the above

**Q.no 25. The data link layer at the receiver site receives a frame from its \_\_\_ layer, extracts data from the frame, and delivers the data to its \_\_\_ layer.**

**A : physical, network**

B : physical, Transport

C : Application, network

D : Transport, network

**Q.no 26. Which of the following layer of OSI model also called end-to-end layer?**

A : Presentation layer

B : Network layer

C : Session layer

**D : Transport layer**

**Q.no 27. Which layer of the OSI model are host-to-host layer?**

A : Physical layer

**B : Network layer**

C : Datalink layer

D : Physical, Datalink, Network, Transport

**Q.no 28. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?**

A : SRTP

B : RTCP

C : RCP

D : RTCT

**Q.no 29. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is \_\_\_\_\_**

A : Mutual open

B : Mutual Close

C : Simultaneous open

D : Simultaneous close

**Q.no 30. Communication offered by TCP is \_\_\_\_\_**

A : Full-duplex

B : Half-duplex

C : Semi-duplex

D : Byte by byte

**Q.no 31. Discarding policy is mainly done by \_\_\_\_\_**

A : Sender

B : Receiver

C : Router

D : Switch

**Q.no 32. Which of the following network device has the slowest type of connection?**

A : DSL

B : Router

C : Bridges

D : Dial-up modems

**Q.no 33. In HDLC which frames are used to transport user data and control information relating to user data (piggybacking)?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 34. There are \_\_\_ types of HDLC frames**

A : 2

B : 4

C : 5

D : 3

**Q.no 35. The \_\_\_\_\_ translates internet domain and host names to IP address.**

A : domain name system

B : routing information protocol

C : network time protocol

D : internet relay chat

**Q.no 36. Most dial-up access to Internet is accomplished by using \_\_\_\_**

A : TCP

B : PPP

C : IP

D : IPX

**Q.no 37. The default connection type used by HTTP is \_\_\_\_**

A : Persistent

B : Non-persistent

C : Can be either persistent or non-persistent depending on connection request

D : P- Persistent

**Q.no 38. How many different type of server exist?**

A : Only one

B : Two

C : Three

**D : Four**

**Q.no 39. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.**

A : 66

**B : 67**

C : 68

D : 69

**Q.no 40. Which of the following protocol is defined in Transport layer?**

A : FTP

**B : TCP**

C : IP

D : Telnet

**Q.no 41. Which is the correct expression for the length of UDP datagram?**

**A : UDP length = IP length – IP header's length**

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 42. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_**

A : internet relay chat

B : broader gateway protocol

C : address resolution protocol

D : Internet Address Chat

**Q.no 43. Define the type of the following destination MAC address  
4A:30:10:21:10:1A**

A : IEEE 802.11 wireless LAN runs CSMA with collision detection protocol

B : Ethernet is not based on CSMA with collision detection protocol

C : CSMA with collision detection is not suitable for a high propagation delay network like satellite network

D : There is no contention in a CSMA with collision detection network

**Q.no 44. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 45. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

A : each station can send both commands and respond to commands

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 46. In the IPv4 addressing format, the number of networks allowed under Class C addresses is**

A : 2 rest to 14

B : 2 rest to 7

C : 2 rest to 21

D : 2 rest to 24

**Q.no 47. Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_**

A : 161

B : 123

C : 162

D : 124

**Q.no 48. Each frame in HDLC protocol may contain up \_\_ fields**

A : 4

B : 5

C : 6

D : 7

**Q.no 49. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?**

A : HTTP

B : FTP

C : Telnet

D : TCP

**Q.no 50. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

B : 8

C : 4

D : 10

**Q.no 51. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_**

A : Application layer

B : Transport layer

C : Link layer

D : Session layer

**Q.no 52. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.**

A : Packet

B : Buffer

C : Segment

D : Acknowledgment

**Q.no 53. What does the java.net.InetAddress class represent?**

A : Socket

B : IP Address

C : Protocol

D : MAC Address

**Q.no 54. In HDLC which frames are used only to transport control information?**

A : S-Frames

B : I-Frames

C : V-frames

D : U-Frame

**Q.no 55. a character-oriented approach and a bit-oriented approaches used in which type of framing?**

A : fixed size

B : zero size

C : variable-size

D : cells

**Q.no 56. In wireless network most of the energy is lost during transmission. How many percentage of additional energy is added if there is collision**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 57. The \_\_\_\_\_Protocol, adds a simple error control mechanism to the \_\_\_\_\_Protocol.**

A : Selective Repeat ARQ; Go-Back-N ARQ

B : Go-Back-N ARQ; Stop-and-Wait

C : Stop-and-Wait ARQ; Go-Back-N ARQ

**D : Stop-and-Wait ARQ; Stop-and-Wait**

**Q.no 58. For Stop-and-Wait ARQ, for 20 data packets sent, \_\_\_\_\_ acknowledgments are needed.**

A : less than 10

B : 19

C : 21

**D : 20**

**Q.no 59. IPv6 does not support which of the following addressing modes?**

A : unicast addressing

B : multicast addressing

**C : broadcast addressing**

D : anycast addressing

**Q.no 60. Peer-to-peer processes are processes on two or more devices communicating at a**

**A : same layer**

B : different layer

C : different layer on different device

D : none of above

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**Answer for Question No 1. is b**

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**Answer for Question No 2. is a**

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**Answer for Question No 3. is b**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is c**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is b**

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**Answer for Question No 8. is c**

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**Answer for Question No 9. is c**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is c**

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**Answer for Question No 14. is a**

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**Answer for Question No 15. is d**

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**Answer for Question No 16. is c**

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**Answer for Question No 17. is c**

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**Answer for Question No 18. is a**

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**Answer for Question No 19. is c**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is b**

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**Answer for Question No 23. is d**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is a**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is b**

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**Answer for Question No 28. is a**

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**Answer for Question No 29. is c**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is c**

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**Answer for Question No 32. is d**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is d**

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**Answer for Question No 35. is a**

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**Answer for Question No 36. is b**

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**Answer for Question No 37. is a**

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**Answer for Question No 38. is d**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is b**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is c**

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**Answer for Question No 43. is c**

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**Answer for Question No 44. is a**

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**Answer for Question No 45. is a**

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**Answer for Question No 46. is c**

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**Answer for Question No 47. is b**

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**Answer for Question No 48. is c**

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**Answer for Question No 49. is c**

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**Answer for Question No 50. is b**

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**Answer for Question No 51. is d**

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**Answer for Question No 52. is d**

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**Answer for Question No 53. is b**

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**Answer for Question No 54. is a**

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**Answer for Question No 55. is c**

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**Answer for Question No 56. is b**

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**Answer for Question No 57. is d**

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**Answer for Question No 58. is d**

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**Answer for Question No 59. is c**

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**Answer for Question No 60. is a**

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Seat No -

Total number of questions : 60

12897\_COMPUTER NETWORKS CN

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
- 2) Attempt any 50 questions out of 60.
- 3) Use of calculator is allowed.
- 4) Each question carries 1 Mark.
- 5) Specially abled students are allowed 20 minutes extra for examination.
- 6) Do not use pencils to darken answer.
- 7) Use only black/blue ball point pen to darken the appropriate circle.
- 8) No change will be allowed once the answer is marked on OMR Sheet.
- 9) Rough work shall not be done on OMR sheet or on question paper.
- 10) Darken ONLY ONE CIRCLE for each answer.

---

**Q.no 1. Which type of network is used for small geographical area such as in a one building?**

A : WLAN

B : MAN

C : LAN

D : WAN

**Q.no 2. Static Channel Allocation is used in which technologies**

A : SAN

B : PAN

C : LAN and MAN

D : WAN

**Q.no 3. Physical or logical arrangement of network is ?**

A : Topology

B : Routing

C : Networking

D : Control

**Q.no 4. UTP Cable is used by\_\_\_\_**

A : 802.3 z

B : 802.3

C : 802.3 u

D : 802.11

**Q.no 5. IEEE created Gigabit Ethernet under the name \_\_\_\_**

A : Four

B : Eight

C : Six

D : Seven

**Q.no 6. In point to point protocol \_\_\_\_ field of PPP Frame carries the user data.**

A : flag

B : payload

C : Protocol

D : FCS

**Q.no 7. RSVP is a \_\_\_\_\_ oriented protocol**

A : receiver

B : bit

C : byte

D : both b & c

**Q.no 8. \_\_\_\_\_ protocol has no flow or error control.**

- A : simplex
- B : complex
- C : duplex
- D : half duplex

**Q.no 9. Which network is able to connect to each computer through a common central line?**

- A : Bus
- B : Star
- C : router
- D : WAN

**Q.no 10. In virtual circuit network each packet contains \_\_\_\_\_**

- A : full source and destination address
- B : a short VCI number
- C : only source address
- D : only destination address

**Q.no 11. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as \_\_\_\_\_**

- A : Flow control
- B : Error control
- C : Congestion control
- D : Error detection

**Q.no 12. Which topology used by CSMA with collision detection**

- A : MAC address
- B : IP address
- C : port address

D : specific address

**Q.no 13. CIDR stands for**

A : Classless Inter-Domain Routing

B : Classless Intra-Domain Routing

C : Classful Inter-Domain Routing

D : Classful Intra-Domain Routing

**Q.no 14. DHCP is the abbreviation of**

A : Dynamic Host Control Protocol

B : Dynamic Host Configuration Protocol

C : Dynamic Hyper Control Protocol

D : Dynamic Hyper Configuration Protocol

**Q.no 15. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 16. The network layer protocol for internet is \_\_\_\_\_**

A : ethernet

B : Internet protocol

C : hypertext transfer protocol

D : file transfer protocol

**Q.no 17. HDLC protocol resides in \_\_\_ layer**

A : Data Link Layer

B : Application Layer

C : Transport Layer

D : Network Layer

**Q.no 18. Which topology allow to connect computers including server in a ring?**

A : Star

B : Tree

C : Ring

D : LAN

**Q.no 19. Retransmission of packets must not be done when \_\_\_\_\_**

A : Packet is lost

B : Packet is corrupted

C : Packet is needed

D : Packet is error-free

**Q.no 20. ICMP stands for**

A : Internet Control Message Protocol

B : Internet Control Management Protocol

C : Internal Control Manage Protocol

D : Internet Count Management Protocol

**Q.no 21. CSMA with collision avoidance method is used for**

A : Contention window, negative Acknowledgment and Interframe space

B : Contention window, Acknowledgment and Interframe space

C : Negative Acknowledgment, Contention window, and Interframe space

D : Contention window, Positive Acknowledgment and IFR

**Q.no 22. Network layer at source is responsible for creating a packet from data coming from another \_\_\_\_\_**

A : Station

B : Link

C : Node

D : Protocol

**Q.no 23. Which LAN Protocols are designed for Fast Ethernet to compete**

A : Bus and Ring

B : Bus and Star

C : Ring and Tree

D : Ring and Mesh

**Q.no 24. Which of the following fields in IPV4 datagram is not related to fragmentation?**

A : Type of service

B : Fragment offset

C : Flags

D : Identification

**Q.no 25. What is the maximum data rate for the 802.11g standard**

A : 10 to 15 percent

B : 5 to 10 percent

C : 0 to 5 percent

D : 15 to 20 percent

**Q.no 26. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

D : Packet switching and Circuit switching

**Q.no 27. What is routing algorithm used by OSPF routing protocol?**

A : Distance vector

B : Flooding

C : Path vector

D : Link state

**Q.no 28. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends \_\_\_\_\_**

A : Packet which are not lost

B : Only those packets which are lost or corrupted

C : Packet from starting

D : All the packets

**Q.no 29. Bit stuffing means adding extra 0 to the data section of the frame when there is a sequence of bits with the same pattern as the \_\_\_\_\_**

A : header

B : trailer

C : payload

D : flag

**Q.no 30. The size of flag field in HDLC frame is \_\_\_\_\_**

A : 8 bits

B : 4 bits

C : 2 bits

D : 9 bits

**Q.no 31. A place where there is a field of signal through which you can access WiFi internet is called –**

A : WiFi Hotspots

B : WiFi Internet

C : WiFi Zone

D : WiFi Range

**Q.no 32. In SCTP, a data chunk is numbered using \_\_\_\_\_**

A : TSN

B : SI

C : SSN

D : GSN

**Q.no 33. In CSMA with collision detection the energy level of channel can have three values: Normal , Zero, and abnormal which of the following is correct sequence**

A : Wired network

**B : Wireless Network**

C : Wired and Wireless Network

D : Client Server Network

**Q.no 34. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

**C : Determines on which outing link a packet is to be forwarded**

D : Forwards a packet to all outgoing links except the originated link

**Q.no 35. POP3 and IMAP are e-mail accounts in which**

A : One automatically gets one's mail everyday

B : One has to be connected to the server to read or write one's mail

**C : One only has to be connected to the server to send and receive email**

D : One does not need any telephone lines

**Q.no 36. A proxy server is used as the computer?**

**A : with external access**

B : acting as a backup

C : performing file handling

D : accessing user permissions

**Q.no 37. The frame transmission and collision detection is a continuous process which method is used for this condition**

A : Idle,Captured the channel and sending its Frame, collision detection

**B : Captured the channel and sending its Frame,Idle, collision detection**

C : Idle, collision detection,Captured the channel and sending its Frame

D : Captured the channel and sending its Frame, collision detection,Idle

**Q.no 38. In the \_\_\_\_\_ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle**

A : nonpersistent

B : Pure Aloha

**C : CSMA with collision detection**

D : CSMA with collision avoidance

**Q.no 39. Most dial-up access to Internet is accomplished by using \_\_\_\_\_**

A : TCP

**B : PPP**

C : IP

D : IPX

**Q.no 40. What is the use of Ping command?**

**A : To test a device on the network is reachable**

B : To test a hard disk fault

C : To test a bug in a Application

D : To test a Pinter Quality

**Q.no 41. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?**

**A : SYNC flooding attack**

B : Active attack

C : Passive attack

D : Denial-of-service attack

**Q.no 42. In \_\_\_\_\_, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.**

A : ARM

**B : ABM**

C : NBM

D : NRM

**Q.no 43. The dump of a UDP header in hexadecimal is CB84000D001C001C. What is the total length of the user datagram?**

A : 24Bytes

B : 64Bytes

**C : 28Bytes**

D : 32 Bytes

**Q.no 44. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.**

A : Automatic

B : Half-duplex

C : Full-duplex

**D : Simplex**

**Q.no 45. \_\_\_\_\_ is used in PPP payload field whenever the flag sequence appears in the message, so that the receiver does not consider it as the end of the frame.**

A : extra stuffing

B : bit stuffing

C : character stuffing

**D : Byte stuffing**

**Q.no 46. In Asynchronous Balanced Mode (ABM) of HDLC protocol \_\_\_\_\_**

A : each station can send both commands and respond to commands

B : each station can send commands but not respond to commands

C : each station can send either command or respond to commands but not both

D : Station does not send command and responses

**Q.no 47. In the IPv4 addressing format, the number of networks allowed under Class C addresses is**

A : 2 rest to 14

B : 2 rest to 7

**C : 2 rest to 21**

D : 2 rest to 24

**Q.no 48. Peer-to-peer processes are processes on two or more devices communicating at a**

**A : same layer**

B : different layer

C : different layer on different device

D : none of above

**Q.no 49. In PPP, the default maximum length of the information field is \_\_\_\_\_**

**A : 1500 bytes**

B : 15000 bytes

C : 150 bytes

D : 15 bytes

**Q.no 50. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.**

A : User datagram protocol

**B : Transmission control protocol**

C : Border gateway protocol

D : Domain host control protocol

**Q.no 51. In class C , if subnet mask is 255.255.255.224 then calculates number of subnet?**

A : 6

**B : 8**

C : 4

D : 10

**Q.no 52. Which is the correct expression for the length of UDP datagram?**

**A : UDP length = IP length – IP header's length**

B : UDP length = UDP length – UDP header's length

C : UDP length = IP length + IP header's length

D : UDP length = UDP length + UDP header's length

**Q.no 53. Byte stuffing means adding a special byte to the data section of the frame when there is a character with the same pattern as the \_\_\_\_.**

A : trailer

B : header

C : payload

**D : flag**

**Q.no 54. What does the java.net.InetAddress class represent?**

A : Socket

**B : IP Address**

C : Protocol

D : MAC Address

**Q.no 55. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 1000 frames per second**

A : 135 frames

B : 92 frames

C : 38 frames

D : 156 frames

**Q.no 56. \_\_\_\_\_ is a bit oriented protocol for communication over point to point and multipoint links.**

A : High level Data link Control (HDLC)

B : Highest level Data link Control (HDLC)

C : Hyper Text Transfer Protocol (HTTP)

D : Domain Name Server (DNS) Protocol

**Q.no 57. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps What is the throughput if the system (all stations together) produces 250 frames per second**

A : 92 frames

B : 368 frames

C : 49 frames

D : 151 frames

**Q.no 58. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces 500 frames per second**

A : 2msec

B : 4msec

C : 2sec

D : 4sec

**Q.no 59. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

A : 10000

B : 10001

C : 12001

D : 11001

**Q.no 60. In HTTP pipelining \_\_\_\_\_**

A : multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses

B : multiple HTTP requests can not be sent on a single TCP connection

C : multiple HTTP requests are sent in a queue on a single TCP connection

D : multiple HTTP requests are sent at random on a single TCP connection

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**Answer for Question No 1. is c**

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**Answer for Question No 2. is c**

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**Answer for Question No 3. is a**

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**Answer for Question No 4. is a**

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**Answer for Question No 5. is b**

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**Answer for Question No 6. is b**

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**Answer for Question No 7. is a**

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**Answer for Question No 8. is a**

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**Answer for Question No 9. is a**

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**Answer for Question No 10. is b**

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**Answer for Question No 11. is a**

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**Answer for Question No 12. is a**

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**Answer for Question No 13. is a**

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**Answer for Question No 14. is b**

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**Answer for Question No 15. is d**

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**Answer for Question No 16. is b**

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**Answer for Question No 17. is a**

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**Answer for Question No 18. is c**

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**Answer for Question No 19. is d**

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**Answer for Question No 20. is a**

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**Answer for Question No 21. is b**

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**Answer for Question No 22. is d**

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**Answer for Question No 23. is b**

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**Answer for Question No 24. is a**

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**Answer for Question No 25. is b**

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**Answer for Question No 26. is d**

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**Answer for Question No 27. is d**

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**Answer for Question No 28. is b**

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**Answer for Question No 29. is d**

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**Answer for Question No 30. is a**

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**Answer for Question No 31. is a**

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**Answer for Question No 32. is a**

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**Answer for Question No 33. is b**

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**Answer for Question No 34. is c**

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**Answer for Question No 35. is c**

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**Answer for Question No 36. is a**

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**Answer for Question No 37. is b**

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**Answer for Question No 38. is c**

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**Answer for Question No 39. is b**

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**Answer for Question No 40. is a**

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**Answer for Question No 41. is a**

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**Answer for Question No 42. is b**

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**Answer for Question No 43. is c**

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**Answer for Question No 44. is d**

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**Answer for Question No 45. is d**

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**Answer for Question No 46. is a**

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**Answer for Question No 47. is c**

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**Answer for Question No 48. is a**

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**Answer for Question No 49. is a**

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**Answer for Question No 50. is b**

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**Answer for Question No 51. is b**

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**Answer for Question No 52. is a**

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**Answer for Question No 53. is d**

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**Answer for Question No 54. is b**

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**Answer for Question No 55. is c**

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**Answer for Question No 56. is a**

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**Answer for Question No 57. is c**

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**Answer for Question No 58. is a**

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**Answer for Question No 59. is b**

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**Answer for Question No 60. is a**

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# **Computer Networks & Security**

## **Unit 1**

1. What is the full form of WLAN?

- a) Wide Local Area Network
- b) Wireless Local Area Network
- c) Wireless Land Access Network
- d) Wireless Local Area Node

Answer: b

Explanation: WLAN stands for Wireless Local Area Network. Wireless networks are increasingly used as a replacement for wires within homes, buildings, and office settings through the deployment of wireless local area networks (WLANs).

2. WLANs use high power levels and generally require a license for spectrum use.

- a) True
- b) False

Answer: b

Explanation: WLANs use low power and generally do not require a license for spectrum. They provide ad hoc high data transmission rate connections deployed by individuals. In the late 1980s, FCC provided licence free bands

for low power spread spectrum devices in ISM band, which is used by WLAN.

3. What is the name of 300 MHz of unlicensed spectrum allocated by FCC in the ISM band?

- a) UNII
- b) Unlicensed PCS
- c) Millimetre wave
- d) Bluetooth

Answer: a

Explanation: FCC allocated 300 MHz of unlicensed spectrum in the ISM bands. This allocation is called the Unlicensed National Information Infrastructure (UNII) band. It was allocated for the express purpose of supporting low power license free spread spectrum data communication.

4. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

- a) IEEE 802.16
- b) IEEE 802.3
- c) IEEE 802.11
- d) IEEE 802.15

Answer: c

Explanation: IEEE 802.11 is a set of media access control and physical layer specifications for implementing WLAN computer communication.

5. Which of the following is not a standard of WLAN?

- a) HIPER-LAN
- b) HIPERLAN/2
- c) IEEE 802.11b
- d) AMPS

Answer: d

Explanation: AMPS is a standard first generation network.. HIPERLAN/2 is also developed in Europe that provides up to 54 Mbps of user data.

6. Which of the following is the 802.11 High Rate Standard?

- a) IEEE 802.15
- b) IEEE 802.15.4
- c) IEEE 802.11g
- d) IEEE 802.11b

Answer: d

Explanation: IEEE 802.11b was a high rate standard approved in 1999. It provided new data rate capabilities of 11 Mbps, 5.5 Mbps in addition to the original 2 Mbps and 1 Mbps user rates of IEEE 802.11.

7. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?

- a) FHSS and DSSS
- b) THSS and FHSS

c) THSS and DSSS

d) Hybrid technique

Answer: a

Explanation: Original IEEE 802.11 used both the approaches of FHSS (Frequency Hopping Spread Spectrum) and DSSS (Direct Sequence Spread Spectrum). But from late 2001s, only DSSS modems were used within IEEE 802.11.

8. Which of the following WLAN standards has been named Wi-Fi?

a) IEEE 802.6                          b) IEEE 802.15.4

c) DSSS IEEE 802.11b                d) IEEE 802.11g

Answer: c

Explanation: The DSSS IEEE 802.11b standard has been named Wi-Fi by the Wireless Ethernet Compatibility Alliance. It is a group that promotes adoption of 802.11 DSSS WLAN.

9. Which of the following is developing CCK-OFDM?

a) IEEE 802.11a b) IEEE 802.11b c) IEEE 802.15.4 d) IEEE 802.11g

Answer: d

Explanation: IEEE 802.11g is developing CCK-OFDM (Complementary Code Keying Orthogonal Frequency Division Multiplexing) standards. It will support roaming capabilities and dual band use for public WLAN networks. It also has backward compatibility with 802.11b technologies.

10. What is the data rate of HomeRF 2.0?

- a) 10 Mbps
- b) 54 Mbps
- c) 200 Mbps
- d) 1 Mbps

Answer: a

Explanation: HomeRF 2.0 has data rate of the order of 10 Mbps. The FHSS proponents of IEEE 802.11 have formed the HomeRF standard that supports the frequency hopping equipment. In 2001, HomeRF developed a 10 Mbps FHSS standard called HomeRF 2.0.

11. HIPER-LAN stands for \_\_\_\_\_

- a) High Precision Radio Local Area Network
- b) High Performance Radio Local Area Network
- c) High Precision Radio Land Area Network
- d) Huge Performance Radio Link Access Node

Answer: b

Explanation: HIPER-LAN stands for High Performance Radio Local Area Network. It was intended to provide individual wireless LANs for computer communication.

12. What is the range of asynchronous user data rates provided by HIPER-LAN?

- a) 1-100 Mbps
- b) 50-100 Mbps
- c) 1-20 Mbps
- d) 500 Mbps to 1 Gbps

Answer: c

Explanation: HIPER-LAN provides asynchronous user data rates of between 1 to 20 Mbps, as well as time bounded messaging of rates of 64 kbps to 2.048 Mbps.

13. What is the name of the European WLAN standard that provides user data rate upto 54 Mbps?

- a) UNII
- b) WISP
- c) MMAC
- d) HIPERLAN/2

Answer: d

Explanation: HIPERLAN/2 has emerged as the next generation European WLAN standard. It provides up to 54 Mbps of user data to a variety of networks.

14. What is WISP?

- a) Wideband Internet Service Protocol
- b) Wireless Internet Service Provider
- c) Wireless Instantaneous Source Provider
- d) Wideband Internet Source Protocol

Answer: b

Explanation: WISP is a wireless Internet Service Provider used to explore public LANs (publican). It builds a nationwide infrastructure of WLAN access points in selected hotels, restaurants or airports..

15. The price of WLAN hardware is more than 3G telephones and fixed wireless equipment.

a) True

b) False

Answer: b

Explanation: As, WLAN could be used to provide access for the last 100 meters into homes and businesses. Therefore, the price of WLAN hardware is far below 3G telephones and fixed wireless equipment.

16. Most LANs:

a. are based on Ethernet

b. use CSMA/CD

c. use UTP cable

d. all of the above

Answer: Option D

17. The standard that describes Ethernet-type networks is:

a. EIA 232 b. IEEE 488.1 c. IEEE 802.3 d. CCITT ITU-E

Answer : C

18. Broadband LANs:

- a. modulate the data onto a carrier
- b. use coaxial cables
- c. are provided by cable TV companies for Internet access
- d. all of the above

Answer : d

19. Which of the following cannot be used as a medium for 802.3 ethernet?

- a. A thin coaxial cable
- b. A twisted pair cable
- c. A microwave link
- d. A fiber optical cable

Answer: (c) A microwave link

Explanation: A microwave link cannot be used as a medium for 802.3 ethernets, because a microwave link is a transmission network that utilizes a beam of radio waves in the microwave frequency spectrum to relay video, audio, or data between two places.

20. A collection of hyperlinked documents on the internet forms the ?.

- a. World Wide Web (WWW)
- b. E-mail system

- c. Mailing list
- d. Hypertext markup language

Answer: (a) World Wide Web (WWW)

Explanation: World Wide Web (WWW) creates a collection of hyperlinked documents on the Internet.

## **UNIT 2 MCQ**

**“Network Layer”.**

1. The network layer is concerned with \_\_\_\_\_ of data.

- a) bits
- b) frames
- c) packets
- d) bytes

Answer: c

Explanation: In computer networks, the data from the application layer is sent to the transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits.

2. Which one of the following is not a function of network layer?

- a) routing
- b) inter-networking
- c) congestion control
- d) error control

Answer: d

Explanation: In the OSI model, network layer is the third layer and it provides data routing paths for network communications. Error control is a function of the data link layer and the transport layer.

3. A 4 byte IP address consists of \_\_\_\_\_

- a) only network address
- b) only host address
- c) network address & host address
- d) network address & MAC address

Answer: c

Explanation: An ip address which is 32 bits long, that means it is of 4 bytes and is composed of a network and host portion and it depends on address class. The size of the host address and network address depends upon the class of the address in classful IP addressing.

4. In virtual circuit network each packet contains \_\_\_\_\_

- a) full source and destination address
- b) a short VC number
- c) only source address
- d) only destination address

Answer: b

Explanation: A short VC number also called as VCID (virtual circuit identifier) is a type of identifier which is used to distinguish between several virtual circuits in a connection oriented circuit switched network. Each virtual circuit is used to transfer data over a larger packet switched network.

5. Which of the following routing algorithms can be used for network layer design?

- a) shortest path algorithm
- b) distance vector routing
- c) link state routing
- d) all of the mentioned

Answer: d

Explanation: The routing algorithm is what decides where a packet should go next. There are several routing techniques like shortest path algorithm, static and dynamic routing, decentralized routing, distance vector routing, link state routing, Hierarchical routing etc. The routing algorithms go hand in hand with the operations of all the routers in the networks. The routers are the main participants in these algorithms.

6. A subset of a network that includes all the routers but contains no loops is called \_\_\_\_\_

- a) spanning tree
- b) spider structure
- c) spider tree
- d) special tree

Answer: a

Explanation: Spanning tree protocol (STP) is a network protocol that creates a loop free logical topology for ethernet networks. It is a layer 2 protocol that runs on bridges and switches. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network.

7. The network layer protocol for internet is \_\_\_\_\_

- a) ethernet
- b) internet protocol
- c) hypertext transfer protocol
- d) file transfer protocol

Answer: b

Explanation: There are several protocols used in Network layer. Some of them are IP, ICMP, CLNP, ARP, IPX, HRSP etc. Hypertext transfer protocol is for application layer and ethernet protocol is for data link layer.

8. ICMP is primarily used for \_\_\_\_\_

- a) error and diagnostic functions
- b) addressing
- c) forwarding
- d) routing

Answer: a

Explanation: ICMP abbreviation for Internet Control Message Protocol is used by networking devices to send error messages and operational information indicating a host or router cannot be reached. ICMP operates over the IP packet to provide error reporting functionality as IP by itself cannot report errors.

“Network Layer”.

9. Which level is the network layer in the OSI model?

- a) Third level
- b) Fourth level
- c) Second level
- d) Fifth layer

Answer: a

Explanation: The network layer is the third level of the open system interconnection model and the layer that provides data routing paths for network communication.

10. Data in network layer is transferred in the form of \_\_\_\_\_

- a) Layers
- b) Packets
- c) Bytes
- d) Bits

Answer: b

Explanation: Data is transferred in the form of packets via logical network paths in an ordered format controlled by the network layer.

11. The network layer is considered as the \_\_\_\_\_ of the network layer.

- a) backbone
- b) packets
- c) bytes
- d) bits

Answer: a

Explanation: The network layer is considered as the backbone of the network layer. It selects and manages the best logical path for data transfer between nodes.

12. The network layer contains which hardware device?

- a) Routers, Bridges
- b) Bridges only
- c) Bridges and switches
- d) Routers, Bridges and Switches

Answer: d

Explanation: This layer contains hardware devices such as routers, bridges, firewalls, and switches, but it actually creates a logical image of the most efficient communication rout and implements it with a physical medium.

13. Network layer protocol exists in \_\_\_\_\_

- a) Host
- b) Switches
- c) Packets
- d) Bridges

Answer: a

Explanation: Network layer protocols exist in every host or router. The router examines the header fields of all the IP packets that pass through it.

14. What are the common protocols associated with the network layer?

- a) Address Resolution Protocol
- b) Reverse Address Resolution Protocol
- c) Internet protocol
- d) Neighbour Discovery Protocol

Answer: c

Explanation: Internet protocol and Netware IPX/SPX are the most common protocols associated with the network layer.

15. The network layer responds to request from which layer?

- a) Transport layer
- b) Data layer
- c) Application layer
- d) Session layer

Answer: a

Explanation: In OSI model, we are having 7 layers in which the network layer responds to request from the layer above it called Transport Layer.

16. The network layer issues request to which layer?

- a) Transport layer
- b) Data layer
- c) Application layer
- d) Session layer

Answer: b

Explanation: In OSI model, we are having 7 layers in which the network layer issues request to the layer below it called Data Link Layer.

17. IP is connectionless.

- a) True
- b) False

Answer: a

Explanation: IP is connectionless, is that a data packet can travel from a sender to a receiver without the recipient having to send an acknowledgment. Connection-oriented protocols exist at other, higher layers of the OSI model.

18. Does network layer in TCP/IP and OSI Model are same.

- a) True
- b) False

Answer: b

Explanation: The TCP/IP Internet layer is in fact only a subset of functionality of the network layer. It describes only one type of network architecture, the Internet.

19. What are called routers?

- a) The devices that operates at session layer
- b) The devices that operates at data layer
- c) The devices that operates at application layer
- d) The devices that operates at network

Answer: d

Explanation: The network interconnection devices that operate at the network layer are usually called routes, which at this point should hopefully come as no surprise to you.

20. ICMP stands for \_\_\_\_\_

- a) Internet Coordinate Message Protocol
- b) Internet Control Message Protocol
- c) Interconnect Control Message Protocol
- d) Interconnect Coordinate Message Protocol

Answer: b

Explanation: The Internet Protocol is the key network layer protocol that implements the TCP/IP Protocol suites. Since IP is the protocol that provides the mechanism for delivering datagrams, between devices, it is designed to be relatively basic, and to function with few "bell and whistles".

21. Packets will be transferred in how many types?

- a) 5 types
- b) 4 types
- c) 2 types
- d) 3 types

Answer: d

Explanation: Routing deals with determining how packet will routed (transferred) from source to destination. It can of three types : 1. Static.2.Dynamic.3.Semi Dynamic.

22. How many version /s of IP's are there?

- a) 4 versions
- b) 3 versions
- c) 2 versions
- d) 1 version

Answer: c

Explanation: Two versions of the Internet Protocol are in common use in the Internet today.

The original version of the Internet Protocol for use in the Internet is Internet Protocol Version 4, first installed in 1983

23.TCP/IP is composed of \_\_\_\_\_ number of layers.

- a) 2
- b) 3
- c) 4
- d) 5

Answer: c

Explanation: TCP/IP is extensively used model for the World Wide Web for providing network communications which are composed of 4 layers that work together. Each layer is composed of header and payload.

“ICMP”.

24. Internet Control Message Protocol (ICMP) has been designed to compensate

- a) Error-reporting
- b) Error-correction
- c) Host and management queries
- d) All of the mentioned

Answer: d

Explanation: IP by itself does not provide the features of error reporting or error correction. So, to address these issues a network layer protocol called Internet Control Message Protocol is used. ICMP operates over the IP packet to provide error reporting functionality.

25. Header size of the ICMP message is \_\_\_\_\_

- a) 8-bytes
- b) 8-bits
- c) 16-bytes
- d) 16-bits

Answer: a

Explanation: An ICMP message has an 8-byte header and a variable size data section. Out of the 8 bytes, the first 4 bytes are of a fixed format having the type, code and checksum fields and the next 4 bytes depend upon the type of the message.

26. During error reporting, ICMP always reports error messages to \_\_\_\_\_

- a) Destination
- b) Source
- c) Next router
- d) Previous router

Answer: b

Explanation: ICMP notifies the source about the error when an error is detected because the datagram knows information about source and destination IP address. The source can then retransmit the data again or try to correct those errors.

27. The source-quench message in ICMP was designed to add a kind of \_\_\_\_\_ to the IP.

- a) error control
- b) flow control
- c) router control
- d) switch control

Answer: b

Explanation: Firstly, it informs the source that the datagram has been discarded. Secondly, it warns the source that there is congestion in the network. It's type 4 error reporting message after which the source is expected to reduce the flow of packets.

28 .ICMP works on which layer

- a) Physical Layer
- b) Datalink Layer
- c) Network layer
- d) Transport Layer

Answer: Option c

29. Which protocol uses both TCP and UDP

- a) FTP
- b) SMTP
- c) Telnet
- d) DNS

Answer: Option d

30. TCP/IP suite was created by

- a) IEEE
- b) Department of defence
- c) Open source
- d) None of above

Answer: Option b

### CNS UNIT 3 MCQ

1. The term that is used to place packet in its route to its destination is called \_\_\_\_\_

- 
- a) Delayed   b) Urgent   c) Forwarding   d) Delivering

Answer: c

Explanation: Forwarding is done by the nodes in the path from source to destination, that are not the intended destination for the packet in order to pass the packet to the next node in the path. The destination machine does not forward the packet to any other node.

2. A second technique to reduce routing table and simplify searching process is called \_\_\_\_\_

- 
- a) Network-Specific Method
  - b) Network-Specific Motion
  - c) Network-Specific Maintaining

Answer: a

Explanation: In the network specific forwarding method, there is only one record, the destination of the packet, in the routing table and not the other hosts of the network. The other two forwarding methods are the default method and the next-hop method.

3. Next-Hop Method is used to reduce contents of a \_\_\_\_\_

- a) Revolving table   b) Rotating Table   c) Routing Table   d) Reallocate table

Answer: c

Explanation: In the next-hop forwarding method, the routing table of each router in the path contains the address of only the next hop in the path of the packet. This method is suitable for short distances only.

4. Several techniques can make size of routing table manageable and also handle issues such as \_\_\_\_\_

- a) Maturity
- b) Error reporting
- c) Tunneling
- d) Security

Answer: d

Explanation: The size of the routing table in the technique must be manageable for the network nodes i.e. it must not be too big. Security of the forwarding packet is the highest priority for a technique and must be high enough so that only authorized senders and receivers can access the packet's content.

5. Host-specific routing is used for purposes such as checking route or providing \_\_\_\_\_

- a) Network Measures
- b) Security Measures
- c) Routing Measures
- d) Delivery Measures

Answer: b

Explanation: In host-specific routing, the route of the packet is defined based on the exact match of the packet's IP with the routing table entry of the host. It provides the best security for the packet as the packet is forwarded only to routers in the predefined path.

6. In Unicast routing, if instability is between three nodes, stability cannot be \_\_\_\_\_

- a) Stable
- b) Reversed
- c) Guaranteed
- d) Forward

Answer: c

Explanation: In Unicast routing, there is only sender and one receiver. So, if there is instability between three nodes, in which one is sender, one is receiver and one is the router in the path, there is no other path available for the packet and the stability of the network is not guaranteed.

7. In Unicast Routing, Dijkstra algorithm creates a shortest path tree from a \_\_\_\_\_

- a) Graph
- b) Tree
- c) Network
- d) Link

Answer: a

Explanation: The Djikstra's shortest path algorithm is the fastest among the algorithms for finding the shortest path in a graph. But it is a greedy method based algorithm so it does not guarantee the shortest path every time.

8. In Multicast Routing Protocol, flooding is used to broadcast packets but it creates \_\_\_\_\_

- a) Gaps
- b) Loops
- c) Holes
- d) Links

Answer: b

Explanation: In multicast routing, there is one sender and many receivers. So flooding is the most basic method to forward packets to many receivers. The one issue with flooding is that it creates routing loops. One loop prevention method is that the routers will not send the packet to a node where the packet has been received before.

9. RPF stands for \_\_\_\_\_

- a) Reverse Path Forwarding
- b) Reverse Path Failure
- c) Reverse Packet Forwarding
- d) Reverse Protocol Failure

Answer: a

Explanation: Reverse Path Forwarding is a loop-free forwarding method for multi-cast routing in modern systems. The method focuses on forwarding the packet away from the source IP in each iteration to make sure there are no loops.

10. LSP stands for \_\_\_\_\_

- a) Link Stable Packet
- b) Link State Packet
- c) Link State Protocol
- d) Link State Path

Answer: b

Explanation: A Link State Packet is a packet created by a router that lists its neighboring nodes and routers in link state routing protocol. It is shared with other routers to find the shortest path from a source to the destination.

11. Alternate and adaptive routing algorithm belongs to .....

- A. static routing
- B. permanent routing
- C. standard routing
- D. dynamic routing

Answer : D. dynamic routing

12. .... protocol is a popular example of a link-state routing protocol.

- A. SPF
- B. BGP
- C. RIP
- D. OSPF

answer: D OSPF

13. An example of the routing algorithm is ...

- A. TELNET
- B. TNET
- C. ARPANET
- D. ARNET

Answer: C. ARPANET

14. The Enhanced Interior Gateway Routing Protocol(EIGRP) is categorized as a .....

- A. Distance vector routing protocols
- B. Link state routing protocols
- C. Hybrid routing protocols
- D. Automatic state routing protocols

Answer: C. Hybrid routing protocols

15. In ..... routing, the routing table holds the address of just the next hop instead of complete route information.

- A. next-hop
- B. host-specific
- C. network-specific
- D. default

Answer: 5) A. next-hop

16. ..... was originally developed to provide a loop-free method of exchanging routing information between autonomous systems.

- A. OSPF
- B. EIGRP
- C. BGP
- D. RIP

Answer: C. BGP

17. In ..... routing, the destination address is a network address in the routing tables.

- A. next-hop
- B. host-specific
- C. network-specific
- D. default

Answer: C. network-specific

18. Logical partitioning of the network, authentication and faster convergence rate are the advantages of ....

- A. OSPF
- B. EIGRP
- C. BGP
- D. RIP

Answer: A. OSPF

19. The ..... flag indicates the availability of a router.

- A. up
- B. host-specific
- C. gateway
- D. added by redirection

Answer: D. added by redirection

20. The type of autonomous system defined by BGP is/are ..

- A. Stub
- B. Multi-homed
- C. Transit
- D. All of the above

Answer: D. All of the above

21. For a direct delivery, the ..... flag is on.

- A. up
- B. host specific
- C. gateway
- D. added by redirection

Anwer: C. gateway

22. A ..... AS has connections to two or more autonomous systems and carries both local and transit traffic.

- A. Stub
- B. Multi-homed
- C. Transit
- D. All of the above

Answer: C. Transit

23. In unicast routing, each router in the domain has a table that defines a ..... path tree to possible destinations.

- A. average
- B. longest
- C. shortest
- D. very longest

Answer: C. shortest

24. .... supports the simultaneous use of multiple unequal cost paths to a destination.

- A. OSPF
- B. EIGRP
- C. BGP
- D. RIP

Answer: B. EIGRP

25. In multicast routing, each involved router needs to construct a ..... path tree for each group.

- A. average
- B. longest
- C. shortest
- D. very longest

Answer: c. Shortest

26 Which of the following is/are the **benefits provided by EIGRP?**

- i) Faster convergence
  - ii) partial routing updates
  - iii) High bandwidth utilization
  - iv) Route summarization
- A. i, iii and iv only

B. i, ii and iii only

C. ii, iii and iv only

D. i, ii and iv only

Answer: D. i, ii and iv only

27. In OSPF, a ..... link is a network that is connected to only one router.

A. point-to-point      B. transient      C. stub      D. multipoint

Answer: C. stub

28,. .... is the process of consolidating multiple contiguous routing entries into a single advertisement.

A. Faster convergence

B. Partial routing updates

C. Route summarization

D. Multiple protocols

Answer: C. Route summarization

29. In OSPF, when the link between two routers is broken, the administration may create a ..... link between them using a longer path that probably goes through several routers.

A. point-to-point      B. transient      C. stub      D. multipoint

Answer: D. multipoint

30. .... is the process of introducing external routers into an OSPF network.

- A. Route redistribution
- B. Route summarization
- C. Route reintroducing
- D. Route recreation

Answer: A. Route redistribution

## Computer Network and Security MCQ Questions Pdf

### Question: 1

First boot sector virus is

- (A) Computed
- (B) Mind
- (C) Brain
- (D) Elk cloner

Ans: C

Brain

### Question: 2

The linking of computers with a communication system is called

- (A) Assembling
- (B) Interlocking
- (C) Pairing
- (D) Networking

Ans: D

Networking

### Question: 3

The phrase \_\_\_\_\_ describe viruses, worms, Trojan horse attack applets and attack scripts.

- (A) Spam
- (B) Phishing
- (C) Malware
- (D) Virus

**Ans: C**

**Malware**

**Question: 4**

Abuse messaging systems to send unsolicited is

- (A) Phishing
- (B) Adware
- (C) Firewall
- (D) Spam

**Ans: D**

**Spam**

**Question: 5**

A person who uses his or her expertise to gain access to other people's computers to get information illegally or do damage is a

- (A) Hacker
- (B) Analyst
- (C) Spammer
- (D) Programmer

Ans: A

Hacker

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This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Basics – 2".

1. When collection of various computers seems a single coherent system to its client, then it is called \_\_\_\_\_
- a) computer network
  - b) distributed system
  - c) networking system
  - d) mail system

[View Answer](#)

Answer: b

Explanation: A Computer network is defined as a collection of interconnected computers which uses a single technology for connection.

A distributed system is also the same as computer network but the main difference is that the whole collection of computers appears to its users as a single coherent system.  
Example:- World wide web

2. Two devices are in network if \_\_\_\_\_

- a) a process in one device is able to exchange information with a process in another device
- b) a process is running on both devices
- c) PIDs of the processes running of different devices are same
- d) a process is active and another is inactive

[View Answer](#)

Answer: a

Explanation: A computer network, or data network, is a digital telecommunications network which allows nodes to share resources. In computer networks, computing

devices exchange data with each other using connections between nodes. The nodes have certain processes which enable them to share a specific type of data using a distinct protocol.

3. Which of the following computer networks is built on the top of another network?

- a) prior network
- b) chief network
- c) prime network
- d) overlay network

[View Answer](#)

Answer: d

Explanation: An overlay network is a computer network that is built on top of another network. Some examples of an overlay network are Virtual Private Networks (VPN) and Peer-to-Peer Networks (P2P).

4. In computer network nodes are \_\_\_\_\_

- a) the computer that originates the data
- b) the computer that routes the data
- c) the computer that terminates the data
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: In a computer network, a node can be anything that is capable of sending data or receiving data or even routing the data to its destination. Routers, Computers and Smartphones are some examples of network nodes.

5. Communication channel is shared by all the machines on the network in \_\_\_\_\_

- a) broadcast network
- b) unicast network
- c) multicast network
- d) anycast network

[View Answer](#)

Answer: a

Explanation: In a broadcast network, information is sent to all stations in a network whereas in a multicast network the data or information is sent to a group of stations in the network. In unicast network, information is sent to only one specific station. The broadcast address of the network is the last assigned address of the network.

6. Bluetooth is an example of \_\_\_\_\_

- a) personal area network
- b) local area network
- c) virtual private network
- d) wide area network

[View Answer](#)

Answer: a

Explanation: Bluetooth is a wireless technology used to create a wireless personal area network for data transfer up to a distance of 10 meters. It operates on 2.45 GHz frequency band for transmission.

7. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.

- a) bridge
- b) firewall
- c) router
- d) hub

[View Answer](#)

Answer: c

Explanation: A router is a networking device that forwards data packets between computer networks. Routers perform the traffic directing functions on the Internet. They make use of routing protocols like RIP to find the cheapest path to the destination.

8. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_

- a) protocol architecture
- b) protocol stack
- c) protocol suite
- d) protocol system

[View Answer](#)

Answer: b

Explanation: A protocol stack refers to a group of protocols that are running concurrently that are employed for the implementation of network protocol suite. Each layer in the network model has to use one specific protocol from the protocol stack.

9. Network congestion occurs \_\_\_\_\_

- a) in case of traffic overloading
- b) when a system terminates

- c) when connection between two nodes terminates
- d) in case of transfer failure

[View Answer](#)

Answer: a

Explanation: Network congestion occurs when traffic in the network is more than the network could handle. To avoid network congestion, the network management uses various open-loop and closed-loop congestion control techniques.

10. Which of the following networks extends a private network across public networks?

- a) local area network
- b) virtual private network
- c) enterprise private network
- d) storage area network

[View Answer](#)

Answer: b

Explanation: A virtual private network extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. VPN provides enhanced security and online anonymity to users on the internet. It is also used to unblock websites which are unavailable in certain regions.

Computer Networks Questions & Answers –

Access Networks

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Access Networks".

1. Which of this is not a constituent of residential telephone line?

- a) A high-speed downstream channel
- b) A medium-speed downstream channel
- c) A low-speed downstream channel
- d) An ultra-high speed downstream channel

[View Answer](#)

Answer: c

Explanation: A low-speed downstream channel is not a constituent of a residential telephone line. But it might be just a two-way telephone channel. Internet can be provided through a high-speed downstream channel in a residential telephone line.

2. DSL telcos provide which of the following services?

- a) Wired phone access
- b) ISP
- c) Wired phone access and ISP
- d) Network routing and ISP

[View Answer](#)

Answer: c

Explanation: DSL stands for Digital Subscriber Line and ISP stands for Internet Service Provider. In a Digital Subscriber Line system, the same company which provides phone connection is also an ISP. The internet is provided through the preinstalled telephone lines.

3. The function of DSLAM is to \_\_\_\_\_

- a) Convert analog signals into digital signals
- b) Convert digital signals into analog signals
- c) Amplify digital signals
- d) De-amplify digital signals

[View Answer](#)

Answer: a

Explanation: DSLAM stands for Digital Subscriber Line Access Multiplexer and it's used by Telcos to convert the analog signals to digital signals for the purpose of providing internet. The DSLAM located in a telco's Central Office does this function.

4. Which of the following terms is not associated with DSL?

- a) DSLAM
- b) CO
- c) Splitter
- d) CMTS

[View Answer](#)

Answer: d

Explanation: CMTS stands for Cable modem termination system. It is used in cable internet access. In cable internet access, internet is not provided through telephone

lines and the companies that provide such connections don't necessarily provide telephone access.

5. HFC contains \_\_\_\_\_

- a) Fibre cable
- b) Coaxial cable
- c) A combination of Fibre cable and Coaxial cable
- d) Twisted Pair Cable

[View Answer](#)

Answer: c

Explanation: Hybrid fiber-coaxial (HFC) is a telecommunications industry term for a broadband network that combines optical fiber and coaxial cable. It has been popularly used since the early 1990s. It is stronger than the optical fiber cables and faster than the co-axial cables.

6. Which of the following statements is not applicable for cable internet access?

- a) It is a shared broadcast medium
- b) It includes HFCs
- c) Cable modem connects home PC to Ethernet port
- d) Analog signal is converted to digital signal in DSLAM

[View Answer](#)

Answer: d

Explanation: CMTS stands for Cable modem termination system. In cable access analog signal is converted to digital signal by CMTS. In cable internet access, internet is not provided through telephone lines. DSLAM is used by Telecom companies.

7. Among the optical-distribution architectures that are essentially switched ethernet is

- 
- a) AON
  - b) PON
  - c) NON
  - d) MON

[View Answer](#)

Answer:a

Explanation: AON stands for Active optical networks which are essentially switched Ethernets. Each user has his/her own dedicated optical fiber line connecting to the ISP in an AON.

8. StarBand provides \_\_\_\_\_

- a) FTTH internet access
- b) Cable access
- c) Telephone access
- d) Satellite access

[View Answer](#)

Answer: d

Explanation: StarBand was a two-way satellite broadband Internet service available in the U.S. from 2000–2015. It was discontinued from September 30 2015 due to increasing competition from other ISPs.

9. Home Access is provided by \_\_\_\_\_

- a) DSL
- b) FTPP
- c) Cable
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Home Internet Access is provided by DSL, FTPP, and Cable. FTPP provides the fastest speeds followed by the cable connections and then the DSLs. FTPP is popularly used in modern connections.

10. ONT is connected to splitter using \_\_\_\_\_

- a) High speed fibre cable
- b) HFC
- c) Optical cable
- d) Twisted pair cable

[View Answer](#)

Answer: c

Explanation: ONT stands for Optical Network Terminal. The ONT connects to the Termination Point (TP) with an optical fibre cable. It translates light signals from the fibre optic line to electric signals that the router can read.

11. Which of the following factors affect transmission rate in DSL?

- a) The gauge of the twisted-pair line
- b) Degree of electrical interference
- c) Shadow fading

d) The gauge of the twisted-pair line and degree of electrical interference

[View Answer](#)

Answer: d

Explanation: Because DSL is made of twisted wire copper pair, the gauge of twisted pair line i.e. the protection and electrical interference would affect the transmission rate in DSL. Unlike DSL, FTTP is not really affected by these factors.

Computer Networks Questions & Answers –

Reference Models – 1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Reference Models – 1".

1. How many layers are present in the Internet protocol stack (TCP/IP model)?

- a) 5
- b) 7
- c) 6
- d) 10

[View Answer](#)

Answer: a

Explanation: There are five layers in the Internet Protocol stack. The five layers in Internet Protocol stack is Application, Transport, Network, Data link and Physical layer. The internet protocol stack model is also called the TCP/IP model and it's used in modern Internet Communication.

2. The number of layers in ISO OSI reference model is \_\_\_\_\_

- a) 5
- b) 7
- c) 6
- d) 10

[View Answer](#)

Answer: b

Explanation: The seven layers in ISO OSI reference model is Application,

Presentation, Session, Transport, Network, Data link and Physical layer. OSI stands for Open System Interconnect and it is a generalized model.

3. Which of the following layers is an addition to OSI model when compared with TCP IP model?

- a) Application layer
- b) Presentation layer
- c) Session layer
- d) Session and Presentation layer

[View Answer](#)

Answer: d

Explanation: The only difference between OSI model and TCP/IP model is that the functions of Presentation and Session layer in the OSI model are handled by the transport layer itself in TCP/IP. OSI is a generalized model and TCP/IP is an application specific model.

4. Application layer is implemented in \_\_\_\_\_

- a) End system
- b) NIC
- c) Ethernet
- d) Packet transport

[View Answer](#)

Answer: a

Explanation: Not only application layer, but presentation layer, session layer and transport layer are also implemented in the end system. The layers below are implemented outside the end system, for example, the network layer is implemented on the routers and the physical layer is implemented for the medium.

5. Transport layer is implemented in \_\_\_\_\_

- a) End system
- b) NIC
- c) Ethernet
- d) Signal transmission

[View Answer](#)

Answer: a

Explanation: Application, Presentation, Session and Transport layer are implemented in the end system. The transport layer handles the process to process delivery of the packet through ports.

6. The functionalities of the presentation layer include \_\_\_\_\_

- a) Data compression
- b) Data encryption
- c) Data description

d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Some functions of the presentation layer include character-code translation, data conversion, data encryption and decryption, and data translation. It connects the application layer with the layers below converting the human readable text and media to machine readable format and vice-versa.

7. Delimiting and synchronization of data exchange is provided by \_\_\_\_\_

- a) Application layer
- b) Session layer
- c) Transport layer
- d) Link layer

[View Answer](#)

Answer: b

Explanation: The session layer provides the mechanism for opening, closing and managing a session between end-user application processes. The session layer 5 is responsible for establishing managing synchronizing and terminating sessions. In TCP/IP protocol stack, the functions of the session layer are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

8. In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_

- a) Application layer
- b) Transport layer
- c) Link layer
- d) Session layer

[View Answer](#)

Answer: d

Explanation: In OSI reference model, the fifth layer is Session layer. Session layer provides the mechanism for opening, closing and managing a session between enduser application processes. In TCP/IP protocol stack, the functions of the session layer

are handled by the transport layer itself and thus the session layer is missing from the TCP/IP model.

9. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is \_\_\_\_\_

- a) Application layer
- b) Transport layer
- c) Link layer
- d) Session layer

[View Answer](#)

Answer: a

Explanation: In TCP/IP model, the fifth layer is application layer. When data is sent from device A to device B, the 5th layer to receive data at B is application layer.

Application layer provides the interface between applications and the network. The user interacts with only this layer.

10. In the OSI model, as a data packet moves from the lower to the upper layers, headers are \_\_\_\_\_

- a) Added
- b) Removed
- c) Rearranged
- d) Randomized

[View Answer](#)

Answer: b

Explanation: In OSI reference model, when data packet moves from lower layers to higher layer, headers get removed. Whereas when the data packet moves from higher layer to lower layers, headers are added. These headers contain the essential control information for the protocols used on the specific layer.

11. Which of the following statements can be associated with OSI model?

- a) A structured way to discuss and easier update system components
- b) One layer may duplicate lower layer functionality
- c) Functionality at one layer no way requires information from another layer
- d) It is an application specific network model

[View Answer](#)

Answer: c

Explanation: One layer may use the information from another layer, for example timestamp value. The information is contained in the header inserted by the previous

layer. The headers are added as the packet moves from higher layers to the lower layers.

## Computer Networks Questions & Answers –

### Reference Models – 2

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Reference Models – 2”.

1. OSI stands for \_\_\_\_\_

- a) open system interconnection
- b) operating system interface
- c) optical service implementation
- d) open service Internet

[View Answer](#)

Answer: a

Explanation: OSI is the abbreviation for Open System Interconnection. OSI model provides a structured plan on how applications communicate over a network, which also helps us to have a structured plan for troubleshooting. It is recognized by the ISO as the generalized model for computer network i.e. it can be modified to design any kind of computer network.

2. The number of layers in ISO OSI reference model is \_\_\_\_\_

- a) 4
- b) 5
- c) 6
- d) 7

[View Answer](#)

Answer: d

Explanation: In OSI reference model, there are 7 layers namely Application, Presentation, Session, Transport, Network, Data Link and Physical layer. Each layer uses a protocol to perform its designated function, for example, the data link layer uses error detection protocols for error control functions.

3. TCP/IP model does not have \_\_\_\_\_ layer but OSI model have this layer.

- a) session layer
- b) transport layer
- c) application layer
- d) network layer

[View Answer](#)

Answer: a

Explanation: In OSI reference model, there are two layers which are not present in TCP/IP model. They are Presentation and Session layer. The functions of Presentation and Session layer in the OSI model are handled by the transport layer itself in TCP/IP.

4. Which layer is used to link the network support layers and user support layers?

- a) session layer
- b) data link layer
- c) transport layer
- d) network layer

[View Answer](#)

Answer: c

Explanation: Physical, data link and network layers are network support layers and session, presentation and application layers are user support layers. The transport layer links these layers by segmenting and rearranging the data. It uses protocols like TCP and UDP.

5. Which address is used on the internet for employing the TCP/IP protocols?

- a) physical address and logical address
- b) port address
- c) specific address
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The physical, logical, port and specific addresses are used in TCP/IP protocol. All the addressing schemes, that is physical (MAC) and logical address, port address and specific address are employed in both TCP/IP model and OSI model. In TCP/IP, the addresses are more focused on the internet implementation of these addresses.

6. TCP/IP model was developed \_\_\_\_ the OSI model.

- a) prior to
- b) after
- c) simultaneous to
- d) with no link to

[View Answer](#)

Answer: a

Explanation: Several TCP/IP prototypes were developed at multiple research centers between 1978 and 1983, whereas OSI reference model was developed in the year 1984. TCP/IP was developed with the intention to create a model for the Internet while OSI was intended to be a general network model.

7. Which layer is responsible for process to process delivery in a general network model?

- a) network layer
- b) transport layer
- c) session layer
- d) data link layer

[View Answer](#)

Answer: b

Explanation: The role of Transport layer (Layer 4) is to establish a logical end to end connection between two systems in a network. The protocols used in Transport layer is TCP and UDP. The transport layer is responsible for segmentation of the data. It uses ports for the implementation of process-to-process delivery.

8. Which address is used to identify a process on a host by the transport layer?

- a) physical address
- b) logical address
- c) port address
- d) specific address

[View Answer](#)

Answer: c

Explanation: A port number is a way to identify a specific process to which an Internet or other network message is to be forwarded when it arrives at a server. Some examples of port numbers are port 20 which is used for FTP data, port 22 which is used for SSH remote login ,and port 23 which is used for TELNET.

9. Which layer provides the services to user?

- a) application layer

- b) session layer
- c) presentation layer
- d) physical layer

[View Answer](#)

Answer: a

Explanation: In networking, a user mainly interacts with application layer to create and send information to other computer or network. Application layer provides the interface between applications and the network. It is the top-most layer in both the TCP/IP and the OSI model.

10. Transmission data rate is decided by \_\_\_\_\_

- a) network layer
- b) physical layer
- c) data link layer
- d) transport layer

[View Answer](#)

Answer: b

Explanation: Physical layer is a layer 1 device which deals with network cables or the standards in use like connectors, pins, electric current used etc. Basically the transmission speed is determined by the cables and connectors used. Hence it is physical layer that determines the transmission speed in network. Some of the cables used for high speed data transmission are optical fiber cables and twisted pair cables.

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Physical Layer".

1. The physical layer is concerned with \_\_\_\_\_

- a) bit-by-bit delivery
- b) process to process delivery
- c) application to application delivery
- d) port to port delivery

[View Answer](#)

Answer: a

Explanation: Physical layer deals with bit to bit delivery in networking. The data unit in the physical layer is bits. Process to process delivery or the port to port delivery is dealt in the transport layer. The various transmission mediums aid the physical layer in performing its functions.

2. Which transmission media provides the highest transmission speed in a network?

- a) coaxial cable
- b) twisted pair cable
- c) optical fiber
- d) electrical cable

[View Answer](#)

Answer: c

Explanation: Fiber optics is considered to have the highest transmission speed among the all mentioned above. The fiber optics transmission runs at 1000Mb/s. It is called as 1000Base-Lx whereas IEEE standard for it is 802.3z. It is popularly used for modern day network connections due to its high transmission rate.

3. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_

- a) digital modulation
- b) amplitude modulation
- c) frequency modulation
- d) phase modulation

[View Answer](#)

Answer: a

Explanation: In analog modulation, digital low frequency baseband signal (digital bit stream) is transmitted over a higher frequency. Whereas in digital modulation the only difference is that the base band signal is of discrete amplitude level. The bits are represented by only two frequency levels, one for high and one for low.

4. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_

- a) physical signalling sublayer
- b) physical data sublayer
- c) physical address sublayer
- d) physical transport sublayer

[View Answer](#)

Answer: a

Explanation: The portion of physical layer that interfaces with the medium access control sublayer is Physical Signaling Sublayer. The main function of this layer is character encoding, reception, decoding and performs optional isolation functions. It handles which media connection the signal should be forwarded to physically.

5. The physical layer provides \_\_\_\_\_

- a) mechanical specifications of electrical connectors and cables

- b) electrical specification of transmission line signal level
- c) specification for IR over optical fiber
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Anything dealing with a network cable or the standards in use – including pins, connectors and the electric current used is dealt in the physical layer (Layer 1). Physical layer deals with bit to bit delivery of the data aided by the various transmission mediums.

6. In asynchronous serial communication the physical layer provides \_\_\_\_\_
- a) start and stop signalling
  - b) flow control
  - c) both start & stop signalling and flow control
  - d) only start signalling

[View Answer](#)

Answer: c

Explanation: In asynchronous serial communication, the communication is not synchronized by clock signal. Instead of a start and stop signaling and flow control method is followed. Unlike asynchronous serial communication, in synchronous serial communication a clock signal is used for communication, so the start and stop method is not really required.

7. The physical layer is responsible for \_\_\_\_\_
- a) line coding
  - b) channel coding
  - c) modulation
  - d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The physical layer is responsible for line coding, channel coding and modulation that is needed for the transmission of the information. The physical configuration including pins, connectors and the electric current used is dealt in the physical layer based on the requirement of the network application.

8. The physical layer translates logical communication requests from the \_\_\_\_\_ into hardware specific operations.

- a) data link layer
- b) network layer
- c) trasnport layer
- d) application layer

[View Answer](#)

Answer: a

Explanation: Physical layer accepts data or information from the data link layer and converts it into hardware specific operations so as to transfer the message through physical cables. Some examples of the cables used are optical fiber cables, twisted pair cables and co-axial cables.

9. A single channel is shared by multiple signals by \_\_\_\_\_

- a) analog modulation
- b) digital modulation
- c) multiplexing
- d) phase modulation

[View Answer](#)

Answer: c

Explanation: In communication and computer networks, the main goal is to share a scarce resource. This is done by multiplexing, where multiple analog or digital signals are combined into one signal over a shared medium. The multiple kinds of signals are designated by the transport layer which is the layer present on a higher level than the physical layer.

10. Wireless transmission of signals can be done via \_\_\_\_\_

- a) radio waves
- b) microwaves
- c) infrared
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Wireless transmission is carried out by radio waves, microwaves and IR waves. These waves range from 3 Khz to above 300 Ghz and are more suitable for wireless transmission. Radio waves can penetrate through walls and are used in radio communications, microwaves and infrared (IR) waves cannot penetrate through walls and are used for satellite communications and device communications respectively.

## Computer Networks Questions & Answers –

### Data Link Layer

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Data Link Layer”.

1. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.

- a) network layer
- b) physical layer
- c) transport layer
- d) application layer

[View Answer](#)

Answer: a

Explanation: In computer networks, the data from application layer is sent to transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits. Error control and flow control data is inserted in the frames at the data link layer.

2. Which of the following tasks is not done by data link layer?

- a) framing
- b) error control
- c) flow control
- d) channel coding

[View Answer](#)

Answer: d

Explanation: Channel coding is the function of physical layer. Data link layer mainly deals with framing, error control and flow control. Data link layer is the layer where the packets are encapsulated into frames.

3. Which sublayer of the data link layer performs data link functions that depend upon the type of medium?

- a) logical link control sublayer

- b) media access control sublayer
- c) network interface control sublayer
- d) error control sublayer

[View Answer](#)

Answer: b

Explanation: Media access control (MAC) deals with transmission of data packets to and from the network-interface card, and also to and from another remotely shared channel. The MAC sublayer also prevents collision using protocols like CSMA/CD.

4. Header of a frame generally contains \_\_\_\_\_

- a) synchronization bytes
- b) addresses
- c) frame identifier
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: In a frame, the header is a part of the data that contains all the required information about the transmission of the file. It contains information like synchronization bytes, addresses, frame identifier etc. It also contains error control information for reducing the errors in the transmitted frames.

5. Automatic repeat request error management mechanism is provided by \_\_\_\_\_

- a) logical link control sublayer
- b) media access control sublayer
- c) network interface control sublayer
- d) application access control sublayer

[View Answer](#)

Answer: a

Explanation: The logical link control is a sublayer of data link layer whose main function is to manage traffic, flow and error control. The automatic repeat request error management mechanism is provided by the LLC when an error is found in the received frame at the receiver's end to inform the sender to re-send the frame.

6. When 2 or more bits in a data unit has been changed during the transmission, the error is called \_\_\_\_\_

- a) random error
- b) burst error

- c) inverted error
- d) double error

[View Answer](#)

Answer: b

Explanation: When a single bit error occurs in a data, it is called single bit error. When more than a single bit of data is corrupted or has error, it is called burst error. If a single bit error occurs, the bit can be simply repaired by inverting it, but in case of a burst error, the sender has to send the frame again.

7. CRC stands for \_\_\_\_\_

- a) cyclic redundancy check
- b) code repeat check
- c) code redundancy check
- d) cyclic repeat check

[View Answer](#)

Answer: a

Explanation: Cyclic redundancy check is a code that is added to a data which helps us to identify any error that occurred during the transmission of the data. CRC is only able to detect errors, not correct them. CRC is inserted in the frame trailer.

8. Which of the following is a data link protocol?

- a) ethernet
- b) point to point protocol
- c) hdlc
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: There are many data link layer protocols. Some of them are SDLC (synchronous data link protocol), HDLC (High level data link control), SLIP (serial line interface protocol), PPP (Point to point protocol) etc. These protocols are used to provide the logical link control function of the Data Link Layer.

9. Which of the following is the multiple access protocol for channel access control?

- a) CSMA/CD
- b) CSMA/CA
- c) Both CSMA/CD & CSMA/CA
- d) HDLC

[View Answer](#)

Answer: c

Explanation: In CSMA/CD, it deals with detection of collision after collision has occurred, whereas CSMA/CA deals with preventing collision. CSMA/CD is abbreviation for Carrier Sensing Multiple Access/Collision detection. CSMA/CA is abbreviation for Carrier Sensing Multiple Access/Collision Avoidance. These protocols are used for efficient multiple channel access.

10. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called \_\_\_\_\_

- a) piggybacking
- b) cyclic redundancy check
- c) fletcher's checksum
- d) parity check

[View Answer](#)

Answer: a

Explanation: Piggybacking is a technique in which the acknowledgment is temporarily delayed so as to be hooked with the next outgoing data frame. It saves a lot of channel bandwidth as in non-piggybacking system, some bandwidth is reserved for acknowledgement.

Computer Networks Questions & Answers –

Network Layer

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Network Layer".

1. The network layer is concerned with \_\_\_\_\_ of data.

- a) bits
- b) frames
- c) packets
- d) bytes

[View Answer](#)

Answer: c

Explanation: In computer networks, the data from the application layer is sent to the

transport layer and is converted to segments. These segments are then transferred to the network layer and these are called packets. These packets are then sent to data link layer where they are encapsulated into frames. These frames are then transferred to physical layer where the frames are converted to bits.

2. Which one of the following is not a function of network layer?

- a) routing
- b) inter-networking
- c) congestion control
- d) error control

[View Answer](#)

Answer: d

Explanation: In the OSI model, network layer is the third layer and it provides data routing paths for network communications. Error control is a function of the data link layer and the transport layer.

3. A 4 byte IP address consists of \_\_\_\_\_

- a) only network address
- b) only host address
- c) network address & host address
- d) network address & MAC address

[View Answer](#)

Answer: c

Explanation: An ip address which is 32 bits long, that means it is of 4 bytes and is composed of a network and host portion and it depends on address class. The size of the host address and network address depends upon the class of the address in classful IP addressing.

4. In virtual circuit network each packet contains \_\_\_\_\_

- a) full source and destination address
- b) a short VC number
- c) only source address
- d) only destination address

[View Answer](#)

Answer: b

Explanation: A short VC number also called as VCID (virtual circuit identifier) is a type of identifier which is used to distinguish between several virtual circuits in a

connection oriented circuit switched network. Each virtual circuit is used to transfer data over a larger packet switched network.

5. Which of the following routing algorithms can be used for network layer design?

- a) shortest path algorithm
- b) distance vector routing
- c) link state routing
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The routing algorithm is what decides where a packet should go next. There are several routing techniques like shortest path algorithm, static and dynamic routing, decentralized routing, distance vector routing, link state routing, Hierarchical routing etc. The routing algorithms go hand in hand with the operations of all the routers in the networks. The routers are the main participants in these algorithms.

6. Which of the following is not correct in relation to multi-destination routing?

- a) is same as broadcast routing
- b) contains the list of all destinations
- c) data is not sent by packets
- d) there are multiple receivers

[View Answer](#)

Answer: c

Explanation: In multi-destination routing, there is more than one receiver and the route for each destination which is contained in a list of destinations is to be found by the routing algorithm. Multi-destination routing is also used in broadcasting.

7. A subset of a network that includes all the routers but contains no loops is called

- 
- a) spanning tree
  - b) spider structure
  - c) spider tree
  - d) special tree

[View Answer](#)

Answer: a

Explanation: Spanning tree protocol (STP) is a network protocol that creates a loop free logical topology for ethernet networks. It is a layer 2 protocol that runs on bridges

and switches. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network.

8. Which one of the following algorithm is not used for congestion control?

- a) traffic aware routing
- b) admission control
- c) load shedding
- d) routing information protocol

[View Answer](#)

Answer: d

Explanation: The Routing Information Protocol (RIP) is used by the network layer for the function of dynamic routing. Congestion control focuses on the flow of the traffic in the network and uses algorithms like traffic aware routing, admission control and load shedding to deal with congestion.

9. The network layer protocol for internet is \_\_\_\_\_

- a) ethernet
- b) internet protocol
- c) hypertext transfer protocol
- d) file transfer protocol

[View Answer](#)

Answer: b

Explanation: There are several protocols used in Network layer. Some of them are IP, ICMP, CLNP, ARP, IPX, HRSP etc. Hypertext transfer protocol is for application layer and ethernet protocol is for data link layer.

10. ICMP is primarily used for \_\_\_\_\_

- a) error and diagnostic functions
- b) addressing
- c) forwarding
- d) routing

[View Answer](#)

Answer: a

Explanation: ICMP abbreviation for Internet Control Message Protocol is used by networking devices to send error messages and operational information indicating a host or router cannot be reached. ICMP operates over the IP packet to provide error reporting functionality as IP by itself cannot report errors.

## Computer Networks Questions & Answers –

### Transport Layer

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Transport Layer".

1. Transport layer aggregates data from different applications into a single stream before passing it to \_\_\_\_\_

- a) network layer
- b) data link layer
- c) application layer
- d) physical layer

[View Answer](#)

Answer: a

Explanation: The flow of data in the OSI model flows in following manner

Application -> Presentation -> Session -> Transport -> Network -> Data Link -> Physical. Each and every layer has its own set of functions and protocols to ensure efficient network performance.

2. Which of the following are transport layer protocols used in networking?

- a) TCP and FTP
- b) UDP and HTTP
- c) TCP and UDP
- d) HTTP and FTP

[View Answer](#)

Answer: c

Explanation: Both TCP and UDP are transport layer protocol in networking. TCP is an abbreviation for Transmission Control Protocol and UDP is an abbreviation for User Datagram Protocol. TCP is connection oriented whereas UDP is connectionless.

3. User datagram protocol is called connectionless because \_\_\_\_\_

- a) all UDP packets are treated independently by transport layer
- b) it sends data as a stream of related packets
- c) it is received in the same order as sent order

d) it sends data very quickly

[View Answer](#)

Answer: a

Explanation: UDP is an alternative for TCP and it is used for those purposes where speed matters most whereas loss of data is not a problem. UDP is connectionless whereas TCP is connection oriented.

4. Transmission control protocol \_\_\_\_\_

- a) is a connection-oriented protocol
- b) uses a three way handshake to establish a connection
- c) receives data from application as a single stream
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: TCP provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network. Major internet applications like www, email, file transfer etc rely on TCP. TCP is connection oriented and it is optimized for accurate delivery rather than timely delivery.

5. An endpoint of an inter-process communication flow across a computer network is called \_\_\_\_\_

- a) socket
- b) pipe
- c) port
- d) machine

[View Answer](#)

Answer: a

Explanation: Socket is one end point in a two way communication link in the network. TCP layer can identify the application that data is destined to be sent by using the port number that is bound to socket.

6. Socket-style API for windows is called \_\_\_\_\_

- a) wsock
- b) winsock
- c) wins
- d) sockwi

[View Answer](#)

Answer: b

Explanation: Winsock is a programming interface which deals with input output requests for internet applications in windows OS. It defines how windows network software should access network services.

7. Which one of the following is a version of UDP with congestion control?

- a) datagram congestion control protocol
- b) stream control transmission protocol
- c) structured stream transport
- d) user congestion control protocol

[View Answer](#)

Answer: a

Explanation: The datagram congestion control is a transport layer protocol which deals with reliable connection setup, teardown, congestion control, explicit congestion notification, and feature negotiation. It is used in modern day systems where there are really high chances of congestion. The protocol was last updated in the year 2008.

8. A \_\_\_\_\_ is a TCP name for a transport service access point.

- a) port
- b) pipe
- c) node
- d) protocol

[View Answer](#)

Answer: a

Explanation: Just as the IP address identifies the computer, the network port identifies the application or service running on the computer. A port number is 16 bits. The combination of IP address preceded with the port number is called the socket address.

9. Transport layer protocols deals with \_\_\_\_\_

- a) application to application communication
- b) process to process communication
- c) node to node communication
- d) man to man communication

[View Answer](#)

Answer: b

Explanation: Transport layer is 4th layer in TCP/IP model and OSI reference model. It deals with logical communication between process. It is responsible for delivering a message between network host.

10. Which of the following is a transport layer protocol?

- a) stream control transmission protocol
- b) internet control message protocol
- c) neighbor discovery protocol
- d) dynamic host configuration protocol

[View Answer](#)

Answer: a

Explanation: The Stream Control Transmission Protocol (SCTP) is a transport layer protocol used in networking system where streams of data are to be continuously transmitted between two connected network nodes. Some of the other transport layer protocols are RDP, RUDP, TCP, DCCP, UDP etc.

Computer Networks Questions & Answers –

[Topology](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Topology".

1. Physical or logical arrangement of network is \_\_\_\_\_

- a) Topology
- b) Routing
- c) Networking
- d) Control

[View Answer](#)

Answer: a

Explanation: Topology in networks is the structure or pattern in which each and every node in the network is connected. There are many topologies in networking like bus, tree, ring, star, mesh, and hybrid topology. There is no particular best topology and a suitable topology can be chosen based on the kind of application of the network .

2. Which network topology requires a central controller or hub?

- a) Star
- b) Mesh
- c) Ring

d) Bus

[View Answer](#)

Answer: a

Explanation: In star topology, no computer is connected to another computer directly but all the computers are connected to a central hub. Every message sent from a source computer goes through the hub and the hub then forwards the message only to the intended destination computer.

3. \_\_\_\_\_ topology requires a multipoint connection.

- a) Star
- b) Mesh
- c) Ring
- d) Bus

[View Answer](#)

Answer: d

Explanation: In bus topology, there is a single cable to which all the network nodes are connected. So whenever a node tries to send a message or data to other nodes, this data passes through all other nodes in the network through the cable. It is really simple to install but it's not secure enough to be used in most of the computer network applications.

4. Data communication system spanning states, countries, or the whole world is \_\_\_\_\_

- 
- a) LAN
  - b) WAN
  - c) MAN
  - d) PAN

[View Answer](#)

Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. WANs are used to connect cities, states or even countries. A wireless connection is required to build a WAN. The best example of WAN is the Internet.

5. Data communication system within a building or campus is \_\_\_\_\_

- a) LAN
- b) WAN

c) MAN

d) PAN

[View Answer](#)

Answer: a

Explanation: LAN is an abbreviation for Local Area Network. This network interconnects computers in a small area such as schools, offices, residence etc. It is the most versatile kind of data communication system where most of the computer network concepts can be visibly used.

6. WAN stands for \_\_\_\_\_

a) World area network

b) Wide area network

c) Web area network

d) Web access network

[View Answer](#)

Answer: b

Explanation: WAN is the abbreviation for Wide Area Network. This network extends over a large geographical area. These are used to connect cities, states or even countries. They can be connected through leased lines or satellites.

7. In TDM, slots are further divided into \_\_\_\_\_

a) Seconds

b) Frames

c) Packets

d) Bits

[View Answer](#)

Answer: b

Explanation: TDM is the abbreviation for Time division multiplexing. It is technique for combining several low rate channels to a single high rate channel. For a certain time slot, the several channels could use the maximum bandwidth. Each channel is inactive for a period of time too. Some other multiplexing techniques are Frequency division multiplexing and Phase division multiplexing.

8. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.

a) FDM

b) TDM

c) Both FDM & TDM

d) PDM

[View Answer](#)

Answer: a

Explanation: FDM is an abbreviation for Frequency Division Multiplexing. This technique is used when the bandwidth of the channel is greater than the combined bandwidth of all the signals which are to be transmitted. The channel is active at all times unless a collision occurs with another channel trying to use the same frequency. Some other multiplexing techniques are Time division multiplexing and Phase division multiplexing.

Computer Networks Questions & Answers –

Multiplexing

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Multiplexing".

1. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_

- a) Fully duplexing
- b) Multiplexing
- c) Microplexing
- d) Duplexing

[View Answer](#)

Answer: b

Explanation: Multiplexing is a method using which one can send multiple signals through a shared medium at the same time. This helps in using less resources and thus saving the cost of sending messages.

2. Multiplexing is used in \_\_\_\_\_

- a) Packet switching
- b) Circuit switching
- c) Data switching
- d) Packet & Circuit switching

[View Answer](#)

Answer: b

Explanation: Circuit switching is a switching method by which one can obtain a physical path between end points. Circuit switching method is also called a connection oriented network. Two nodes must be physically and logically connected to each other to create a circuit switching network.

3. Which multiplexing technique used to transmit digital signals?

- a) FDM
- b) TDM
- c) WDM
- d) FDM & WDM

[View Answer](#)

Answer: b

Explanation: TDM abbreviation for Time Division Multiplexing is a method used for digital signals. Whereas FDM and WDM abbreviation for Frequency Division Multiplexing, and Wavelength Division Multiplexing, are used for analog signals. TDM is used in applications like ISDN (Integrated Services Digital Network) and PSTN (Public Switched Telephone Network).

4. If there are n signal sources of same data rate, then the TDM link has \_\_\_\_\_ slots.

- a) n
- b)  $n/2$
- c)  $n^2$
- d)  $2n$

[View Answer](#)

Answer: a

Explanation: In TDM, the total unit of time is divided equally among all the signal sources and each and every source has access to the complete channel bandwidth during its allotted time slot. When the time slot of the source is not active, it remains idle and waits for its slot to begin.

5. If link transmits 4000frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is \_\_\_\_\_

- a) 32kbps
- b) 500bps
- c) 500kbps

d) 32bps

[View Answer](#)

Answer: a

Explanation: Transmission rate = frame rate \* number of bits in a slot.

Given: Frame rate = 4000/sec and number of bits in slot = 8

Thus, Transmission rate =  $(4000 * 8)$  bps

= 32000bps

= 32kbps

6. The state when dedicated signals are idle are called \_\_\_\_\_

a) Death period

b) Poison period

c) Silent period

d) Stop period

[View Answer](#)

Answer: c

Explanation: There are instances when connection between two endpoints has been established, but no communication or transfer of messages occurs. This period of time is called silent period. The silent period ends when either of the two endpoints starts the communication.

7. Multiplexing provides \_\_\_\_\_

a) Efficiency

b) Privacy

c) Anti jamming

d) Both Efficiency & Privacy

[View Answer](#)

Answer: d

Explanation: Multiplexing helps us to transfer our messages over a shared channel. This brings up the issue of privacy and efficiency. Fortunately, Multiplexing has high efficiency and high privacy when implemented because in the implementation, the transport layer of the OSI network model handles the function of multiplexing through interfaces called ports which provide the required efficiency and privacy.

8. In TDM, the transmission rate of a multiplexed path is always \_\_\_\_\_ the sum of the transmission rates of the signal sources.

a) Greater than

b) Lesser than

- c) Equal to
- d) Equal to or greater than

[View Answer](#)

Answer: a

Explanation: In TDM the transmission rate provided by the path that is multiplexed will always be greater than the sum of transmission rates of the single sources. This happens because the transmission rate is provided to each source only for a small period of time.

9. In TDM, slots are further divided into \_\_\_\_\_

- a) Seconds
- b) Frames
- c) Packets
- d) Bits

[View Answer](#)

Answer: b

Explanation: TDM is the abbreviation for Time division multiplexing. It is technique for combining several low rate channels to a single high rate channel. For a certain time slot, the several channels could use the maximum bandwidth. Each channel is inactive for a period of time too. Some other multiplexing techniques are Frequency division multiplexing and Phase division multiplexing.

Computer Networks Questions & Answers –

Delays and Loss

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Delays and Loss".

1. Which of the following delay is faced by the packet in travelling from one end system to another?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: When a packet has to travel from one end system to another, it first faces the queuing delay when there are multiple packets which are to be sent, then it faces the transmission delay to convert the packet into bits to be transmitted, and then it faces the propagation delay to propagate the bits through the physical medium.

2. For a 10Mbps Ethernet link, if the length of the packet is 32bits, the transmission delay is \_\_\_\_\_ (in microseconds)

- a) 3.2
- b) 32
- c) 0.32
- d) 320

[View Answer](#)

Answer: a

Explanation: Transmission rate = length / transmission rate =  $32/10 = 3.2$  microseconds.

3. The time required to examine the packet's header and determine where to direct the packet is part of \_\_\_\_\_

- a) Processing delay
- b) Queuing delay
- c) Transmission delay
- d) Propagation delay

[View Answer](#)

Answer: a

Explanation: Processing delay is induced at a router's or other network processor's end in the path of the packet and is caused by the time taken by the processor to examine the packet's header to decide the further path of the packet.

4. Given  $L$  = number of bits in the packet,  $a$  = average rate and  $R$  = transmission rate.

The Traffic intensity in the network is given by \_\_\_\_\_

- a)  $La/R$
- b)  $LR/a$
- c)  $R/La$
- d)  $Ra/L$

[View Answer](#)

Answer: a

Explanation: Traffic Intensity = (Number of bits in packet \* Average Transmission rate)/Current Transmission rate.

5. In the transfer of file between server and client, if the transmission rates along the path is 10Mbps, 20Mbps, 30Mbps, 40Mbps. The throughput is usually \_\_\_\_\_

- a) 20Mbps
- b) 10Mbps
- c) 40Mbps
- d) 50Mbps

[View Answer](#)

Answer: b

Explanation: The throughput is generally the transmission rate of bottleneck link.

6. If end to end delay is given by  $d_{end-end} = N(d_{proc} + d_{trans} + d_{prop})$  is a non congested network. The number of routers between source and destination is?

- a)  $N/2$
- b)  $N$
- c)  $N-1$
- d)  $2N$

[View Answer](#)

Answer: c

Explanation: In the equation  $N (d_{proc} + d_{trans} + d_{prop})$ ,  $N$  is the number of checkpoints/stops that the packet makes as it reaches the destination. The stops are made at each router and the final destination node. Now, since  $N = \text{number of routers} + \text{final node}$ , then  $\text{number of routers} = N - \text{final node}$ . As we know, there is only 1 final node in a path, thus,  $\text{number of routers} = N - 1$ . Suppose, There is a path  $A -> R_1 -> R_2 -> B$  for a packet where  $A$  is the source node,  $B$  is the final node and  $R_1$  and  $R_2$  are routers. The total delay would be given by  $N (d_{proc} + d_{trans} + d_{prop})$  where  $N = 3$ , since the packet would stop at  $R_1$ ,  $R_2$  and  $B$ . The number of routers here are 2, and  $(N - 1)$  is also 2.

7. The total nodal delay is given by \_\_\_\_\_

- a)  $d_{nodal} = d_{proc} - d_{queue} + d_{trans} + d_{prop}$
- b)  $d_{nodal} = d_{proc} + d_{trans} - d_{queue}$
- c)  $d_{nodal} = d_{proc} + d_{queue} + d_{trans} + d_{prop}$
- d)  $d_{nodal} = d_{proc} + d_{queue} - d_{trans} - d_{prop}$

[View Answer](#)

Answer: c

Explanation: The total node-to-node delay, that is, nodal delay is the sum of all, the processing delay, queuing delay, transmission delay and propagation delay. Ideally, the nodal delay must be low as possible for a better Quality of Service of the network.

8. In a network, If P is the only packet being transmitted and there was no earlier transmission, which of the following delays could be zero?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) Processing delay

[View Answer](#)

Answer: b

Explanation: Since there is no other packet to be transmitted, there is no need for a queue. Therefore, the delay caused due to the queuing would be none i.e. 0.

9. Transmission delay does not depend on \_\_\_\_\_

- a) Packet length
- b) Distance between the routers
- c) Transmission rate
- d) Bandwidth of medium

[View Answer](#)

Answer: b

Explanation: Transmission delay = packet length / transmission rate. The transmission rate depends upon the bandwidth of the medium.

10. Propagation delay depends on \_\_\_\_\_

- a) Packet length
- b) Transmission rate
- c) Distance between the routers
- d) Speed of the CPU

[View Answer](#)

Answer: c

Explanation: Propagation delay is caused when the packet is in its electric signal form and is travelling through a medium (a wire or a electromagnetic wave). Propagation delay is the time it takes a bit to propagate from one router to the next. If the distance between the routers is increased, it will take longer time to propagate, that is, there would be more propagation delay.

## Computer Networks Questions & Answers –

### STP Cables

[« Prev](#)

[Next »](#)

This set of Computer Networks Questions and Answers for Campus interviews focuses on "STP (Shielded Twisted Pair) Cables".

1. \_\_\_\_\_ allows LAN users to share computer programs and data.

- a) Communication server
- b) Print server
- c) File server
- d) Network

[View Answer](#)

Answer: c

Explanation: A file server allows LAN users to share computer programs and data. It uses the File Transfer Protocol to provide this feature on ports 20 and 21. The file server works as a medium for the transfer.

2. With respect to physical media, STP cables stands for \_\_\_\_\_

- a) Shielded Twisted Pair Cable
- b) Spanning Tree Protocol Cable
- c) Static Transport Protocol Cable
- d) Shielded Two Power Cable

[View Answer](#)

Answer: a

Explanation: For physical media, STP cable stands for Shielded twisted pair cable. 100 Mbps is the max data capacity of STP cable and its default connector is RJ45. It is popularly used in LANs due to its ease of maintenance and installation.

3. A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of \_\_\_\_\_

- a) LAN intrinsic software
- b) LAN aware software
- c) Groupware

d) LAN ignorant software

[View Answer](#)

Answer: a

Explanation: A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of LAN intrinsic software. They are used to give better functionality of the program and the applications working over it to the users of the LAN.

4. The \_\_\_\_\_ portion of LAN management software restricts access, records user activities and audit data, etc.

- a) Configuration management
- b) Security management
- c) Performance management
- d) Recovery management

[View Answer](#)

Answer: b

Explanation: The Security management portion of LAN management software restricts access, records user activities, and audit data. It is responsible for controlling access to the network based on predefined policy. The security management ensures authentication, confidentiality, and integrity in the LAN.

5. What is the max length of the Shielded twisted pair cable?

- a) 100 ft
- b) 200 ft
- c) 100 m
- d) 200 m

[View Answer](#)

Answer: c

Explanation: The max the Shielded twisted pair cable is 100 meters. If the length exceeds 100 meters, the loss of signals flowing through the cable would be really high. Thus, STP cable is more suitable for smaller networks like LANs.

6. What is the max data transfer rate of STP cables?

- a) 10 Mbps
- b) 100 Mbps
- c) 1000 Mbps

d) 10000 Mbps

[View Answer](#)

Answer: b

Explanation: 100 Mbps is the max data transfer rate that can be handled by STP cables, and its default connector is RJ-45. 100 Mbps is a feasible data transfer rate for small networks like LANs.

7. Which connector does the STP cable use?

a) BNC

b) RJ-11

c) RJ-45

d) RJ-69

[View Answer](#)

Answer: c

Explanation: RJ-45 is used for STP cable. 100 Mbps is the max data transfer rate that can be handled by STP. RJ-45 is popularly used to connect to modern-day routers, computer network cards, and other network devices.

8. What is the central device in star topology?

a) STP server

b) Hub/switch

c) PDC

d) Router

[View Answer](#)

Answer: b

Explanation: In star topology, no computer is connected to another computer directly but all the computers are connected to a central switch or hub. Every message sent from a source computer goes through the switch or hub and the switch or hub then forwards the message only to the intended destination computer.

9. What is the max data transfer rate for optical fiber cable?

a) 10 Mbps

b) 100 Mbps

c) 1000 Mbps

d) 10000 Mbps

[View Answer](#)

Answer: d

Explanation: Fiber channel speeds have been increasing over the years. 10000 Mbps

is the max data transfer rate for optical fiber cables. It is said to be the fastest among the other kinds of cables like STP cables and co-axial cables. People are now using optical fiber cables instead of STP cables for LANs due to their fast data transfer capability.

10. Which of the following architecture uses the CSMA/CD access method?

- a) ARC net
- b) Ethernet
- c) Router
- d) STP server

[View Answer](#)

Answer: b

Explanation: Collision detection is not possible in Ethernet without extensions. Collision detection techniques for multiple access like CSMA/CD are used to detect collisions in the Ethernet architecture.

Computer Networks Questions & Answers –

Network Attacks

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Network Attacks".

1. The attacker using a network of compromised devices is known as \_\_\_\_\_

- a) Internet
- b) Botnet
- c) Telnet
- d) D-net

[View Answer](#)

Answer: b

Explanation: Botnet is a network of compromised devices used by the attacker without the owner's knowledge to perform unethical activities such as spamming. The attacker usually uses the least secure devices to create the botnet.

2. Which of the following is a form of DoS attack?

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In a DoS attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. In vulnerability attack, the attacker exploits any obvious vulnerable entity in the network to deny the victim access into the network. In bandwidth flooding, the attacker floods the victim with a huge flow of packets and uses up all the bandwidth. In connection flooding, the attacker floods the victim network with a huge number of connections, so that, no other machine can connect to it.

3. The DoS attack, in which the attacker establishes a large number of half-open or fully open TCP connections at the target host is \_\_\_\_\_

- a) Vulnerability attack
- b) Bandwidth flooding
- c) Connection flooding
- d) UDP flooding

[View Answer](#)

Answer: c

Explanation: In Vulnerability attack, the attacker exploits the vulnerable control points of the network to deny access to the victims. In Bandwidth flooding, the attacker intentionally uses up all the bandwidth by flooding the victim with a deluge of packets and makes sure that the victim can't use any bandwidth. In UDP flooding, too many UDP packets are sent by the attacker to the victim at random ports.

4. The DoS attack, in which the attacker sends deluge of packets to the targeted host is

- 
- a) Vulnerability attack
  - b) Bandwidth flooding
  - c) Connection flooding
  - d) UDP flooding

[View Answer](#)

Answer: b

Explanation: In Bandwidth flooding, the attacker floods the victim machine with a

deluge of packets to make sure that no bandwidth is available. The victim then cannot utilize the complete bandwidth to perform its operation.

5. Packet sniffers involve \_\_\_\_\_

- a) Active receiver
- b) Passive receiver
- c) Legal receiver
- d) Partially-active receiver

[View Answer](#)

Answer: b

Explanation: The function of packet sniffers is to just silently receive the packets flowing in the channel. If they inject any packets into the channel, they might alert the other users about the intrusion.

6. Sniffers can be prevented by using \_\_\_\_\_

- a) Wired environment
- b) WiFi
- c) Ethernet LAN
- d) Switched network

[View Answer](#)

Answer: d

Explanation: Switches make sure that the packet is sent to the intended receiver and no one else, thus preventing Sniffers to perform their function. Intelligent switches are hence used preferably for the network.

7. Firewalls are often configured to block \_\_\_\_\_

- a) UDP traffic
- b) TCP traffic
- c) Sensitive traffic
- d) Best-effort traffic

[View Answer](#)

Answer: a

Explanation: UDP is more vulnerable to attacks, so firewalls are often configured to block suspicious UDP traffic.

8. In a network, If P is the only packet being transmitted and there was no earlier transmission, which of the following delays could be zero?

- a) Propagation delay
- b) Queuing delay
- c) Transmission delay
- d) Processing delay

[View Answer](#)

Answer: b

Explanation: Since there is no other packet to be transmitted, there is no need for a queue. Therefore, the delay caused due to the queuing would be none i.e. 0.

Computer Networks Questions & Answers –

Physical Media

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Physical Media".

1. Which of this is not a guided media?

- a) Fiber optical cable
- b) Coaxial cable
- c) Wireless LAN
- d) Copper wire

[View Answer](#)

Answer: c

Explanation: Wireless LAN is unguided media.

2. UTP is commonly used in \_\_\_\_\_

- a) DSL
- b) FTP
- c) HTTP
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Unshielded twisted pair(UTP) is commonly used in home access.

3. Coaxial cable consists of \_\_\_\_\_ concentric copper conductors.

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: Coaxial cable has an inner conductor surrounded by a insulating layer, which is surrounded by a conducting shield. Coaxial cable is used to carry high frequency signals with low losses.

4. Fiber optics posses following properties \_\_\_\_\_

- a) Immune electromagnetic interference
- b) Very less signal attenuation
- c) Very hard to tap
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In fibre optics the transmission of information is in the form of light or photons. Due to all above properties mentioned in options fibre optics can be submerged in water and are used at more risk environments.

5. If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps) \_\_\_\_\_

- a)  $n \times 39.8$
- b)  $n \times 51.8$
- c)  $2n \times 51.8$
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The base unit of transmission rates in optical fibre is 51.8 Mbits/s. So an optical carrier represented as OC-n has  $n \times 51.8$  Mbits/s transmission speed. For eg. OC-3 has  $3 \times 51.8$  Mbits/s speed.

6. Terrestrial radio channels are broadly classified into \_\_\_\_\_ groups.

- a) 2
- b) 3

c) 4

d) 1

[View Answer](#)

Answer: b

Explanation: The three types are those that operate over very short distance, those that operate in local areas, those that operate in the wide area.

7. Radio channels are attractive medium because \_\_\_\_\_

- a) Can penetrate walls
- b) Connectivity can be given to mobile user
- c) Can carry signals for long distance
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Radio channels can penetrate walls, can be used to provide connectivity to mobile users and can also carry signals for long distances.

8. Geostationary satellites \_\_\_\_\_

- a) Are placed at a fixed point above the earth
- b) Rotate the earth about a fixed axis
- c) Rotate the earth about a varying axis
- d) All of the mentioned

[View Answer](#)

Answer: a

Explanation: They are placed in orbit at 36,000km above Earth's surface.

Computer Networks Questions & Answers –

Packet Switching & Circuit Switching

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Packet Switching & Circuit Switching".

1. A local telephone network is an example of a \_\_\_\_\_ network.

- a) Packet switched

- b) Circuit switched
- c) Bit switched
- d) Line switched

[View Answer](#)

Answer: b

Explanation: Circuit switching is connection oriented switching technique, whereas in the case of packet switching, it is connectionless. Circuit switching is implemented in the Physical layer, whereas packet switching is implemented in the Network layer. Internet too is based on the concept of circuit switching.

2. Most packet switches use this principle \_\_\_\_\_

- a) Stop and wait
- b) Store and forward
- c) Store and wait
- d) Stop and forward

[View Answer](#)

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet. If the entire packet is not received and the time-out period expires, the packet switch will inform the sender to resend the part of packet or the entire packet based on the algorithm being used.

3. If there are N routers from source to destination, the total end to end delay in sending packet P(L-> number of bits in the packet R-> transmission rate) is equal to

- 
- a) N
  - b)  $(N*L)/R$
  - c)  $(2N*L)/R$
  - d)  $L/R$

[View Answer](#)

Answer: b

Explanation: The equation to find the end to end delay when no. of bits, transmission rate and no. of routers is given by  $(N*L)/R$ . The total end to end delay, that is, nodal delay is the sum of all, the processing delay, queuing delay, transmission delay and propagation delay.

4. What are the Methods to move data through a network of links and switches?

- a) Packet switching and Line switching

- b) Circuit switching and Line switching
- c) Line switching and bit switching
- d) Packet switching and Circuit switching

[View Answer](#)

Answer: d

Explanation: Packet switching and Circuit switching are two different types of switching methods used to connect the multiple communicating devices with one another. Packet switching is used in conventional LAN systems and circuit switching is used in telephonic systems.

5. The required resources for communication between end systems are reserved for the duration of the session between end systems in \_\_\_\_\_ method.

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Frequency switching

[View Answer](#)

Answer: b

Explanation: In circuit switching, a physical path between the sender and receiver is established. This path is maintained until the connection is needed. Circuit switching is implemented in the Physical layer and is used in telephonic systems.

6. As the resources are reserved between two communicating end systems in circuit switching, \_\_\_\_\_ is achieved.

- a) authentication
- b) guaranteed constant rate
- c) reliability
- d) store and forward

[View Answer](#)

Answer: b

Explanation: Circuit switching is connection oriented and is always implemented in the physical layer. Once a path is set, all transmission occurs through the same path. It is used since the early times in telephonic systems.

7. In \_\_\_\_\_ systems, resources are allocated on demand.

- a) packet switching
- b) circuit switching

- c) line switching
- d) frequency switching

[View Answer](#)

Answer: a

Explanation: In packet switching, the bits are received in out of order and need to be assembled at the receiver end, whereas in the case of Circuit switching, all the bits are received in order. All transmissions may not occur through the same path in case of packet switching.

8. Which of the following is not an application layer service?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) Error control

[View Answer](#)

Answer: d

Explanation: Application layer is the topmost layer in the OSI model. Network virtual terminal, mail service, file transfer, access and management are all services of the application layer. It uses protocols like HTTP, FTP, and DNS etc. to provide these services.

Computer Networks Questions & Answers –

Application Layer – 1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Application Layer – 1".

1. Which is not a application layer protocol?

- a) HTTP
- b) SMTP
- c) FTP
- d) TCP

[View Answer](#)

Answer: d

Explanation: TCP is transport layer protocol.

2. The packet of information at the application layer is called \_\_\_\_\_

- a) Packet
- b) Message
- c) Segment
- d) Frame

[View Answer](#)

Answer: b

Explanation: For Application, Presentation and Session layers there is no data format for message. Message is message as such in these three layers. But when it comes to Transport, Network, Data and Physical layer they have data in format of segments, packets, frames and bits respectively.

3. Which one of the following is an architecture paradigms?

- a) Peer to peer
- b) Client-server
- c) HTTP
- d) Both Peer-to-Peer & Client-Server

[View Answer](#)

Answer: d

Explanation: HTTP is a protocol.

4. Application developer has permission to decide the following on transport layer side

- a) Transport layer protocol
- b) Maximum buffer size
- c) Both Transport layer protocol and Maximum buffer size
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Application layer provides the interface between applications and the network. So application developer can decide what transport layer to use and what should be its maximum buffer size.

5. Application layer offers \_\_\_\_\_ service.

- a) End to end

- b) Process to process
- c) Both End to end and Process to process
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: End to End service is provided in the application layer. Whereas process to process service is provided at the transport layer.

6. E-mail is \_\_\_\_\_

- a) Loss-tolerant application
- b) Bandwidth-sensitive application
- c) Elastic application
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Because it can work with available throughput.

7. Pick the odd one out.

- a) File transfer
- b) File download
- c) E-mail
- d) Interactive games

[View Answer](#)

Answer: d

Explanation: File transfer, File download and Email are services provided by the application layer and there are message and data oriented.

8. Which of the following is an application layer service?

- a) Network virtual terminal
- b) File transfer, access, and management
- c) Mail service
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: The services provided by the application layer are network virtual

terminal, file transfer, access and management, mail services, directory services, various file and data operations.

9. To deliver a message to the correct application program running on a host, the \_\_\_\_\_ address must be consulted.

- a) IP
- b) MAC
- c) Port
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: IP address lets you know where the network is located. Whereas MAC address is a unique address for every device. Port address identifies a process or service you want to carry on.

10. Which is a time-sensitive service?

- a) File transfer
- b) File download
- c) E-mail
- d) Internet telephony

[View Answer](#)

Answer: d

Explanation: Internet telephony is Loss-tolerant other applications are not.

11. Transport services available to applications in one or another form \_\_\_\_\_

- a) Reliable data transfer
- b) Timing
- c) Security
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: The transport services that are provided to application are reliable data transfer, security and timing. These are very important for proper end to end services.

12. Electronic mail uses which Application layer protocol?

- a) SMTP
- b) HTTP
- c) FTP

d) SIP

[View Answer](#)

Answer: a

Explanation: Email uses various protocols like SMTP, IMAP and POP. The most prominent one used in application layer is SMTP.

Computer Networks Questions & Answers –

Application Layer – 2

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Application Layer – 2".

1. The \_\_\_\_\_ translates internet domain and host names to IP address.

- a) domain name system
- b) routing information protocol
- c) network time protocol
- d) internet relay chat

[View Answer](#)

Answer: a

Explanation: Domain name system is the way the internet domain names are stored and translated to IP addresses. The domain names systems matches the name of website to ip addresses of the website.

2. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?

- a) HTTP
- b) FTP
- c) Telnet
- d) TCP

[View Answer](#)

Answer: c

Explanation: Telnet is used for accessing remote computers. Using telnet a user can access computer remotely. With Telnet, you can log on as a regular user with

whatever privileges you may have been granted to the specific application and data on the computer.

3. Application layer protocol defines \_\_\_\_\_

- a) types of messages exchanged
- b) message format, syntax and semantics
- c) rules for when and how processes send and respond to messages
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Application layer deals with the user interface, what message is to be sent or the message format, syntax and semantics. A user has access to application layer for sending and receiving messages.

4. Which one of the following protocol delivers/stores mail to receiver server?

- a) simple mail transfer protocol
- b) post office protocol
- c) internet mail access protocol
- d) hypertext transfer protocol

[View Answer](#)

Answer: a

Explanation: SMTP, abbreviation for Simple Mail Transfer Protocol is an application layer protocol. A client who wishes to send a mail creates a TCP connection to the SMTP server and then sends the mail across the connection.

5. The ASCII encoding of binary data is called

- a) base 64 encoding
- b) base 32 encoding
- c) base 16 encoding
- d) base 8 encoding

[View Answer](#)

Answer: a

Explanation: Base64 is used commonly in a number of applications including email via MIME, and storing complex data in XML. Problem with sending normal binary data to a network is that bits can be misinterpreted by underlying protocols, produce incorrect data at receiving node and that is why we use this code.

6. Which one of the following is an internet standard protocol for managing devices on IP network?

- a) dynamic host configuration protocol
- b) simple network management protocol
- c) internet message access protocol
- d) media gateway protocol

[View Answer](#)

Answer: b

Explanation: SNMP is a set of protocols for network management and monitoring.

This protocol is included in the application layer. SNMP uses 7 protocol data units.

7. Which one of the following is not an application layer protocol?

- a) media gateway protocol
- b) dynamic host configuration protocol
- c) resource reservation protocol
- d) session initiation protocol

[View Answer](#)

Answer: c

Explanation: Resource reservation protocol is used in transport layer. It is designed to reserve resources across a network for quality of service using the integrated services model.

8. Which protocol is a signaling communication protocol used for controlling multimedia communication sessions?

- a) session initiation protocol
- b) session modelling protocol
- c) session maintenance protocol
- d) resource reservation protocol

[View Answer](#)

Answer: a

Explanation: SIP is a signaling protocol in which its function includes initiating, maintaining and terminating real time sessions. SIP is used for signaling and controlling multimedia sessions.

9. Which one of the following is not correct?

- a) Application layer protocols are used by both source and destination devices during a communication session
- b) HTTP is a session layer protocol
- c) TCP is an application layer protocol

d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: HTTP is an application layer protocol. Whereas TCP is a transport layer protocol.

10. When displaying a web page, the application layer uses the \_\_\_\_\_

- a) HTTP protocol
- b) FTP protocol
- c) SMTP protocol
- d) TCP protocol

[View Answer](#)

Answer: a

Explanation: HTTP is abbreviation for hypertext transfer protocol. It is the foundation of data communication for world wide web. This protocol decides how the message is formatted and transmitted etc.

Computer Networks Questions & Answers –

HTTP

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “HTTP”.

1. The number of objects in a Web page which consists of 4 jpeg images and HTML text is \_\_\_\_\_

- a) 4
- b) 1
- c) 5
- d) 7

[View Answer](#)

Answer: c

Explanation: 4 jpeg images + 1 base HTML file.

2. The default connection type used by HTTP is \_\_\_\_\_

- a) Persistent
- b) Non-persistent
- c) Can be either persistent or non-persistent depending on connection request
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: By default the http connection is issued with persistent connection. In persistent connection server leaves connection open after sending response. As little as one RTT (Time for a small packet to travel from client to server and back) is required for all referenced objects.

3. The time taken by a packet to travel from client to server and then back to the client is called \_\_\_\_\_

- a) STT
- b) RTT
- c) PTT
- d) JTT

[View Answer](#)

Answer: b

Explanation: RTT stands for round-trip time.

4. The HTTP request message is sent in \_\_\_\_\_ part of three-way handshake.

- a) First
- b) Second
- c) Third
- d) Fourth

[View Answer](#)

Answer: c

Explanation: In first step client sends a segment to establish a connection with the server. In the second the step the client waits for the acknowledgement to be received from the server. After receiving the acknowledgement, the client sends actual data in the third step.

5. In the process of fetching a web page from a server the HTTP request/response takes \_\_\_\_\_ RTTs.

- a) 2
- b) 1
- c) 4

d) 3

[View Answer](#)

Answer: b

Explanation: By default the http connection will be persistent connection. Hence it will take only 1 RTT to fetch a webpage from a server.

6. The first line of HTTP request message is called \_\_\_\_\_

- a) Request line
- b) Header line
- c) Status line
- d) Entity line

[View Answer](#)

Answer: a

Explanation: The line followed by request line are called header lines and status line is the initial part of response message.

7. The values GET, POST, HEAD etc are specified in \_\_\_\_\_ of HTTP message

- a) Request line
- b) Header line
- c) Status line
- d) Entity body

[View Answer](#)

Answer: a

Explanation: It is specified in the method field of request line in the HTTP request message.

8. The \_\_\_\_\_ method when used in the method field, leaves entity body empty.

- a) POST
- b) SEND
- c) GET
- d) PUT

[View Answer](#)

Answer: c

Explanation: There are two methods which help to request a response from a server.

Those are GET and POST. In GET method, the client requests data from server. In POST method the client submits data to be processed to the server.

9. The HTTP response message leaves out the requested object when \_\_\_\_\_ method is used

- a) GET
- b) POST
- c) HEAD
- d) PUT

[View Answer](#)

Answer: c

Explanation: HEAD method is much faster than GET method. In HEAD method much smaller amount of data is transferred. The HEAD method asks only for information about a document and not for the document itself.

10. Find the oddly matched HTTP status codes

- a) 200 OK
- b) 400 Bad Request
- c) 301 Moved permanently
- d) 304 Not Found

[View Answer](#)

Answer: d

Explanation: 404 Not Found.

11. Which of the following is not correct?

- a) Web cache doesn't have its own disk space
- b) Web cache can act both like server and client
- c) Web cache might reduce the response time
- d) Web cache contains copies of recently requested objects

[View Answer](#)

Answer: a

Explanation: Web cache or also known as HTTP cache is a temporary storage where HTML pages and images are stored temporarily so that server lag could be reduced.

12. The conditional GET mechanism

- a) Imposes conditions on the objects to be requested
- b) Limits the number of responses from a server
- c) Helps to keep a cache up-to-date

- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The HTTP protocol requests the server of the website its trying to access so that it can store its files, images etc. in cache memory. This request of asking the server for a document considering a specific parameter is called conditional GET Request.

13. Which of the following is present in both an HTTP request line and a status line?

- a) HTTP version number
- b) URL
- c) Method
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Status line is the start line of an HTTP response. It contains the information such as the protocol version, a status text, status code.

Computer Networks Questions & Answers –

HTTP & FTP

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “HTTP & FTP”.

1. Multiple objects can be sent over a TCP connection between client and server in a persistent HTTP connection.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Persistent connections are kept active after completing transaction so that multiple objects can be sent over the same TCP connection.

2. HTTP is \_\_\_\_\_ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) data link layer

[View Answer](#)

Answer: a

Explanation: HTTP is an Application layer protocol used to define how messages are formatted and transmitted through the World Wide Web.

3. In the network HTTP resources are located by

- a) uniform resource identifier
- b) unique resource locator
- c) unique resource identifier
- d) union resource locator

[View Answer](#)

Answer: a

Explanation: The Uniform Resource Identifier is a name and locator for the resource to be located by the HTTP. The URLs and URNs are derived through the identifier.

4. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.

- a) user datagram protocol
- b) transmission control protocol
- c) border gateway protocol
- d) domain host control protocol

[View Answer](#)

Answer: b

Explanation: HTTP clients perform requests using a TCP connection, because the TCP connection provides a more reliable service. UDP is not a reliable protocol, border gateway protocol is used on top of TCP, while domain host control protocol is a network layer protocol.

5. In HTTP pipelining \_\_\_\_\_

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses
- b) multiple HTTP requests can not be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection

d) multiple HTTP requests are sent at random on a single TCP connection

[View Answer](#)

Answer: a

Explanation: HTTP pipelining helps the client make multiple requests without having to wait for each response, thus saving a lot of time and bandwidth for the client.

6. FTP server listens for connection on port number \_\_\_\_\_

- a) 20
- b) 21
- c) 22
- d) 23

[View Answer](#)

Answer: b

Explanation: Port 20 is used for FTP data. Port 22 is used for SSH remote login. Port 23 is used for TELNET.

7. In FTP protocol, client contacts server using \_\_\_ as the transport protocol.

- a) transmission control protocol
- b) user datagram protocol
- c) datagram congestion control protocol
- d) stream control transmission protocol

[View Answer](#)

Answer: a

Explanation: The clients use the Transmission Control Protocol for FTP as it's more reliable than UDP, DCCP, and SCTP, and reliability of file transfer is required to be as high as possible for FTP.

8. In Active mode FTP, the client initiates both the control and data connections.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: In Passive mode of FTP, the client initiates both data and control connections, while in Active mode, the client initiates the control connection and then the server initiates the data connection.

9. The File Transfer Protocol is built on \_\_\_\_\_

- a) data centric architecture
- b) service oriented architecture
- c) client server architecture
- d) connection oriented architecture

[View Answer](#)

Answer: c

Explanation: The FTP connection includes a Server and a Client which wish to share files. The server can have multiple clients at the same time while the client communicates with only one server at a time.

10. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_

- a) stream mode
- b) block mode
- c) compressed mode
- d) message mode

[View Answer](#)

Answer: d

Explanation: In Stream mode, the data is transferred in a continuous stream. In Block mode, data is transferred after being divided into smaller blocks. In Compressed mode, data is transferred after being compressed using some compression algorithm.

Computer Networks Questions & Answers –

[FTP](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “FTP”.

1. Expansion of FTP is \_\_\_\_\_

- a) Fine Transfer Protocol
- b) File Transfer Protocol
- c) First Transfer Protocol
- d) Fast Transfer Protocol

[View Answer](#)

Answer: b

Explanation: File Transfer Protocol is an application layer protocol used to share "files" between a server and a client. The protocol uses two separate ports for data and control connections: port 20 for data and port 21 for control.

2. FTP is built on \_\_\_\_ architecture.

- a) Client-server
- b) P2P
- c) Data centric
- d) Service oriented

[View Answer](#)

Answer: a

Explanation: An FTP connection includes a Server and a Client which wish to share a number of data files. The server can transfer files with multiple clients at the same time while the client communicates with only one server at a time.

3. FTP uses \_\_\_\_\_ parallel TCP connections to transfer a file.

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: b

Explanation: Control connection using FTP port: 21, and data connection using FTP port: 20. The FTP session is started or ended using port 21 and the actual data i.e. files are sent through port 20.

4. Identify the incorrect statement regarding FTP.

- a) FTP stands for File Transfer Protocol
- b) FTP uses two parallel TCP connections
- c) FTP sends its control information in-band
- d) FTP sends exactly one file over the data connection

[View Answer](#)

Answer: c

Explanation: FTP is out-of-band because the data connection is done separately through port 20 and control connection is done separately through port 21.

5. If 5 files are transferred from server A to client B in the same session. The number of TCP connections between A and B is \_\_\_\_\_

- a) 5
- b) 10
- c) 2
- d) 6

[View Answer](#)

Answer: d

Explanation: The client would first initiate the TCP control connection through port 21. Then for every file transfer, a separate connection would be made through port 20. Now, since we have five files to be transferred, 1 control connection + 5 data connections = 6 total TCP connections.

6. FTP server \_\_\_\_\_

- a) Maintains state information
- b) Is stateless
- c) Has single TCP connection for a file transfer
- d) Has UDP connection for file transfer

[View Answer](#)

Answer: a

Explanation: FTP server maintains state information of every control connection to keep track of the active and inactive connections in the session. This helps the server decide which connection to terminate, in case the connection is inactive for too long.

7. The commands, from client to server, and replies, from server to client, are sent across the control connection in \_\_\_\_\_ bit ASCII format.

- a) 8
- b) 7
- c) 3
- d) 5

[View Answer](#)

Answer: b

Explanation: FTP was designed to transmit commands only in English characters that are possible with just 7 bits in ASCII. Even the media has to be converted to ASCII before transmission.

8. Find the FTP reply whose message is wrongly matched.

- a) 331 – Username OK, password required
- b) 425 – Can't open data connection
- c) 452 – Error writing file
- d) 452 – Can't open data connection

[View Answer](#)

Answer: d

Explanation: The correct response code for the message "Can't open data connection" is 425. Response code 452 is sent usually when the connection is suddenly closed.

9. The data transfer mode of FTP, in which all the fragmenting has to be done by TCP is \_\_\_\_\_

- a) Stream mode
- b) Block mode
- c) Compressed mode
- d) Message mode

[View Answer](#)

Answer: a

Explanation: Stream mode is the default mode of FTP, in which the TCP transforms/fragments the data into segments, and then after the transmission is completed, converts it back to stream of bytes.

10. The password is sent to the server using \_\_\_\_\_ command

- a) PASSWD
- b) PASS
- c) PASSWORD
- d) PWORD

[View Answer](#)

Answer: b

Explanation: The PASS command, preceded by the username, completes the user's identification for access control in an FTP session. Without the valid password, the user won't be able to initiate the FTP connection.

Computer Networks Questions & Answers –

SMTP – 1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "SMTP – 1".

1. When the mail server sends mail to other mail servers it becomes \_\_\_\_\_

- a) SMTP server
- b) SMTP client
- c) Peer
- d) Master

[View Answer](#)

Answer: b

Explanation: SMTP clients are the entities that send mails to other mail servers. The SMTP servers cannot send independent mails to other SMTP servers as an SMTP server. There are no masters or peers in SMTP as it is based on the client-server architecture.

2. If you have to send multimedia data over SMTP it has to be encoded into \_\_\_\_\_

- a) Binary
- b) Signal
- c) ASCII
- d) Hash

[View Answer](#)

Answer: c

Explanation: Since only 7-bit ASCII codes are transmitted through SMTP, it is mandatory to convert binary multimedia data to 7-bit ASCII before it is sent using SMTP.

3. Expansion of SMTP is \_\_\_\_\_

- b) Simple Message Transfer Protocol
- c) Simple Mail Transmission Protocol
- d) Simple Message Transmission Protocol

[View Answer](#)

Answer: a

Explanation: SMTP or Simple Mail Transfer Protocol is an application layer protocol used to transport e-mails over the Internet. Only 7-bit ASCII codes can be sent using SMTP.

4. In SMTP, the command to write receiver's mail address is written with the command \_\_\_\_\_

- a) SEND TO
- b) RCPT TO
- c) MAIL TO
- d) RCVR TO

[View Answer](#)

Answer: b

Explanation: RCPT TO command is followed by the recipient's mail address to specify where or to whom the mail is going to through the internet. If there is more than one receiver, the command is repeated for each address continually.

5. The underlying Transport layer protocol used by SMTP is \_\_\_\_\_

- a) TCP
- b) UDP
- c) Either TCP or UDP
- d) IMAP

[View Answer](#)

Answer: a

Explanation: TCP is a reliable protocol, and Reliability is a mandatory requirement in e-mail transmission using SMTP.

6. Choose the statement which is wrong incase of SMTP?

- a) It requires message to be in 7bit ASCII format
- b) It is a pull protocol
- c) It transfers files from one mail server to another mail server
- d) SMTP is responsible for the transmission of the mail through the internet

[View Answer](#)

Answer: b

Explanation: In SMTP, the sending mail server pushes the mail to receiving mail server hence it is push protocol. In a pull protocol such as HTTP, the receiver pulls the resource from the sending server.

7. Internet mail places each object in \_\_\_\_\_

- a) Separate messages for each object
- b) One message
- c) Varies with number of objects

d) Multiple messages for each object

[View Answer](#)

Answer: b

Explanation: It places all objects into one message as it wouldn't be efficient enough if there are different messages for each object. The objects include the text and all the multimedia to be sent.

8. Typically the TCP port used by SMTP is \_\_\_\_\_

- a) 25
- b) 35
- c) 50
- d) 15

[View Answer](#)

Answer: a

Explanation: The ports 15, 35 and 50 are all UDP ports and SMTP only uses TCP port 25 for reliability.

9. A session may include \_\_\_\_\_

- a) Zero or more SMTP transactions
- b) Exactly one SMTP transactions
- c) Always more than one SMTP transactions
- d) Number of SMTP transactions cant be determined

[View Answer](#)

Answer: a

Explanation: An SMTP session consists of SMTP transactions only even if no transactions have been performed. But no transactions in the session might mean that the session is inactive or is just initiated.

10. Which of the following is an example of user agents for e-mail?

- a) Microsoft Outlook
- b) Facebook
- c) Google
- d) Tumblr

[View Answer](#)

Answer: a

Explanation: Among the options, only Microsoft Outlook is an e-mail agent. Google

is a search engine and Facebook, and Tumblr are social networking platforms. Gmail and Alpine are some other examples of e-mail agent.

11. When the sender and the receiver of an email are on different systems, we need only \_\_\_\_\_

- a) One MTA
- b) Two UAs
- c) Two UAs and one MTA
- d) Two UAs and two MTAs

[View Answer](#)

Answer: d

Explanation: The sender's User Agent (UA) submits the message to a Message Transfer Agent (MTA). Then the MTA sends the message to another MTA i.e. a mail relay. Then the receiver receives the message from the mail relay whenever it is available.

12. User agent does not support this \_\_\_\_\_

- a) Composing messages
- b) Reading messages
- c) Replying messages
- d) Routing messages

[View Answer](#)

Answer: d

Explanation: The user agent is basically a software program that allows the user to send, and receive e-mail messages. Routing of the message is done by the Message Transfer Agent.

Computer Networks Questions & Answers –

SMTP – 2

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "SMTP – 2".

1. Simple mail transfer protocol (SMTP) utilizes \_\_\_\_\_ as the transport layer protocol for electronic mail transfer.

- a) TCP

- b) UDP
- c) DCCP
- d) SCTP

[View Answer](#)

Answer: a

Explanation: Since TCP is a reliable protocol, it's more efficient to use TCP protocol for e-mail transfer. TCP also provides more security than other transport layer protocols.

2. SMTP connections secured by SSL are known as \_\_\_\_\_

- a) SMTPS
- b) SSMTP
- c) SNMP
- d) STARTTLS

[View Answer](#)

Answer: a

Explanation: SSMTP is a simple mail transfer program to send mail from a local PC to a mail host. SNMP is a network management protocol. STARTTLS connections are secured by TLS.

3. SMTP uses which of the following TCP port?

- a) 22
- b) 23
- c) 21
- d) 25

[View Answer](#)

Answer: d

Explanation: Port 21 is used for FTP control connection, port 22 is used by SSH, and port 23 is used by TELNET.

4. Which one of the following protocol is used to receive mail messages?

- a) SMTP
- b) Post Office Protocol (POP)
- c) Internet Message Access Protocol (IMAP)
- d) FTP

[View Answer](#)

Answer: d

Explanation: FTP is used to share files. SMTP, POP and IMAP are the protocols used to send and receive mails on the internet.

5. What is on-demand mail relay (ODMR)?

- a) protocol for SMTP security
- b) an SMTP extension
- c) protocol for web pages
- d) protocol for faster mail transfer

[View Answer](#)

Answer: b

Explanation: ODMR is an extension to SMTP, in which mails are relayed to the receivers after they are authenticated. It allows only the authorized receivers to receive the mail.

6. An email client needs to know the \_\_\_\_\_ of its initial SMTP server.

- a) IP address
- b) MAC address
- c) URL
- d) Name

[View Answer](#)

Answer: a

Explanation: The client needs to know the IP of its initial SMTP server as it has to send the mail first to that server and then the server forwards the mail ahead on behalf of the user.

7. An SMTP session may not include \_\_\_\_\_

- a) zero SMTP transaction
- b) one SMTP transaction
- c) more than one SMTP transaction
- d) one HTTP transaction

[View Answer](#)

Answer: d

Explanation: An SMTP session can only include SMTP transactions regardless the number. Any other protocol's transaction is not included in an SMTP session.

8. SMTP defines \_\_\_\_\_

- a) message transport
- b) message encryption
- c) message content
- d) message password

[View Answer](#)

Answer: a

Explanation: As the name suggests, Simple Mail Transfer Protocol is only responsible for "how" the message is transferred i.e. Transport of the message. Other protocols such as TCP are used to provide other services like encryption for the messages.

9. Which one of the following is an SMTP server configured in such a way that anyone on the internet can send e-mail through it?

- a) open mail relay
- b) wide mail reception
- c) open mail reception
- d) short mail reception

[View Answer](#)

Answer: a

Explanation: Anyone can send an e-mail through an Open Mail Relay server so it acted like a free relay for email agents to forward their mails through. Open Mail Relays are now unpopular because they can be used by attackers to perform man-in-the-middle attacks.

10. SMTP is not used to deliver messages to \_\_\_\_\_

- a) user's terminal
- b) user's mailbox
- c) user's word processor
- d) user's email client

[View Answer](#)

Answer: c

Explanation: SMTP can only be used to send messages to user's terminal, email client or mailbox. A stand-alone word processor cannot be connected to a network, so it won't be possible to deliver messages to it.

Computer Networks Questions & Answers –  
DNS

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "DNS".

1. The entire hostname has a maximum of \_\_\_\_\_

- a) 255 characters
- b) 127 characters
- c) 63 characters
- d) 31 characters

[View Answer](#)

Answer: a

Explanation: An entire hostname can have a maximum of 255 characters. Although each label must be from 1 to 63 characters long. Host name is actually a label that is given to a device in a network.

2. A DNS client is called \_\_\_\_\_

- a) DNS updater
- b) DNS resolver
- c) DNS handler
- d) none of the mentioned

[View Answer](#)

Answer: b

Explanation: DNS client also known as DNS resolver also known as DNS lookup helps to resolve DNS requests using an external DNS server.

3. Servers handle requests for other domains \_\_\_\_\_

- a) directly
- b) by contacting remote DNS server
- c) it is not possible
- d) none of the mentioned

[View Answer](#)

Answer: b

Explanation: Whenever a request is received at server from other domains, it handles this situation by contacting remote DNS server.

4. DNS database contains \_\_\_\_\_

- a) name server records

- b) hostname-to-address records
- c) hostname aliases
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Domain Name system not only deals with mapping IP addresses with the hostname but also deals with exchange of information in the server.

5. If a server has no clue about where to find the address for a hostname then \_\_\_\_\_

- a) server asks to the root server
- b) server asks to its adjacent server
- c) request is not processed
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: Root name servers are actually very important and critical as they are the first step in translating human readable hostnames into IP addresses for carrying out communication.

6. Which one of the following allows client to update their DNS entry as their IP address change?

- a) dynamic DNS
- b) mail transfer agent
- c) authoritative name server
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: Dynamic DNS or in short DDNS or DynDNS helps in automatically updating a name server in the DNS. This does not require manual editing.

7. Wildcard domain names start with label \_\_\_\_\_

- a) @
- b) \*
- c) &
- d) #

[View Answer](#)

Answer: b

Explanation: A wildcard DNS record matches requests to a non-existent domain name. This wildcard DNS record is specified by using asterisk "\*" as the starting of a domain name.

8. The right to use a domain name is delegated by domain name registers which are accredited by \_\_\_\_\_

- a) internet architecture board
- b) internet society
- c) internet research task force
- d) internet corporation for assigned names and numbers

[View Answer](#)

Answer: d

Explanation: The ICANN (Internet Corporation for Assigned Names and Numbers) deals with IP address space allocation, protocol identifier assignment, generic and country code Top Level domain name system management (gTLD and ccTLD).

9. The domain name system is maintained by \_\_\_\_\_

- a) distributed database system
- b) a single server
- c) a single computer
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: A domain name system is maintained by a distributed database system. It is a collection of multiple, logically interrelated databases distributed over a computer network.

10. Which one of the following is not true?

- a) multiple hostnames may correspond to a single IP address
- b) a single hostname may correspond to many IP addresses
- c) a single hostname may correspond to a single IP address
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: It need not be that a single hostname will correspond to a single IP address. For example facebook.com and fb.com both correspond to same IP address. So there can be multiple hostnames for a single IP address.

## Computer Networks Questions & Answers –

SSH

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "SSH".

1. Secure shell (SSH) network protocol is used for \_\_\_\_\_

- a) secure data communication
- b) remote command-line login
- c) remote command execution
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: SSH provides high encryption and security features while communicating through a network. It is a cryptographic network protocol.

2. SSH can be used in only \_\_\_\_\_

- a) unix-like operating systems
- b) windows
- c) both unix-like and windows systems
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: SSH isn't confined to a certain network or operating system. It can be implemented over different networks and on different operating systems.

3. SSH uses \_\_\_\_\_ to authenticate the remote computer.

- a) public-key cryptography
- b) private-key cryptography
- c) any of public-key or private-key
- d) both public-key & private-key

[View Answer](#)

Answer: a

Explanation: Public encryption key is slower but more flexible. Every cryptographic security system requires a private key for private access and a public key for location.

4. Which standard TCP port is assigned for contacting SSH servers?

- a) port 21
- b) port 22
- c) port 23
- d) port 24

[View Answer](#)

Answer: b

Explanation: Port 22 is used for contacting ssh servers, used for file transfers (scp, sftp) and also port forwarding.

5. Which one of the following protocol can be used for login to a shell on a remote host except SSH?

- a) telnet
- b) rlogin
- c) both telnet and rlogin
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: SSH is more secured than telnet and rlogin.

6. Which one of the following is a file transfer protocol using SSH?

- a) SCP
- b) SFTP
- c) Rsync
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: SCP (Secure copy protocol), SFTP (SSH File Transfer Protocol) and Rsync all are file transfer protocols which are used by SSH.

7. SSH-2 does not contain \_\_\_\_\_

- a) transport layer
- b) user authentication layer

- c) physical layer
- d) connection layer

[View Answer](#)

Answer: c

Explanation: SSH2 is a more secure, portable and efficient version of SSH that includes SFTP, which is functionally similar to FTP, but is SSH2 encrypted.

8. Which one of the following feature was present in SSH protocol, version 1?

- a) password changing
- b) periodic replacement of session keys
- c) support for public-key certificates
- d) none of the mentioned

[View Answer](#)

Answer: d

Explanation: All of the mentioned features are provided by SSH-2 and that SSH-1 only provide strong authentication and guarantee confidentiality.

9. SCP protocol is evolved from \_\_\_\_\_ over SSH.

- a) RCP protocol
- b) DHCP protocol
- c) MGCP protocol
- d) GCP protocol

[View Answer](#)

Answer: a

Explanation: RCP is the abbreviation for Rate Control Protocol is a congestion control algorithm for fast user response times.

10. Which one of the following authentication method is used by SSH?

- a) public-key
- b) host based
- c) password
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: SSH used public key authentication, Password authentication, Host based authentication, keyboard authentication and authentication of servers.

## Computer Networks Questions & Answers –

### DHCP

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "DHCP".

1. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client.

- a) IP address
- b) MAC address
- c) Url
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: We use DHCP to allow the hosts to acquire their ip addresses dynamically which is better than visiting each and every host on the network and configure all of this information manually.

2. DHCP is used for \_\_\_\_\_

- a) IPv6
- b) IPv4
- c) Both IPv6 and IPv4
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: DHCP is used for both IPv4 and IPv6 addressing. With DHCP you get to let the hosts know about the change dynamically, and hosts update their info themselves.

3. The DHCP server \_\_\_\_\_

- a) maintains a database of available IP addresses
- b) maintains the information about client configuration parameters
- c) grants a IP address when receives a request from a client
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Whenever a DHCP server gets a request from a client it responds with a DHCP offer containing IP address being offered, network mask offered, the amount of time that the client can use and keep it, the ip address of the DHCP server making this offer.

4. IP assigned for a client by DHCP server is
- a) for a limited period
  - b) for an unlimited period
  - c) not time dependent
  - d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: The IP address offered to a client is only for a limited period of time. There is actually a certain amount of time that the client can use and keep this IP address.

5. DHCP uses UDP port \_\_\_\_\_ for sending data to the server.
- a) 66
  - b) 67
  - c) 68
  - d) 69

[View Answer](#)

Answer: b

Explanation: 67 is the UDP port number that is used as the destination port of a server. Whereas UDP port number 68 is used by the client.

6. The DHCP server can provide the \_\_\_\_\_ of the IP addresses.
- a) dynamic allocation
  - b) automatic allocation
  - c) static allocation
  - d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: When a host acquires multiple offers of IP addresses from different DHCP servers, the host will broadcast a dhcp request identifying the server whose offer has been accepted.

7. DHCP client and servers on the same subnet communicate via \_\_\_\_\_

- a) UDP broadcast
- b) UDP unicast
- c) TCP broadcast
- d) TCP unicast

[View Answer](#)

Answer: a

Explanation: DHCP actually employs a connectionless service, which is provided by UDP, since TCP is connection oriented. It is implemented with two UDP port numbers 67 and 68 for its operations.

8. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_

- a) internet relay chat
- b) broader gateway protocol
- c) address resolution protocol
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: ARP abbreviation for address resolution protocol is used for mapping IP addresses to MAC addresses that are present in the local network.

9. What is DHCP snooping?

- a) techniques applied to ensure the security of an existing DHCP infrastructure
- b) encryption of the DHCP server requests
- c) algorithm for DHCP
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: DHCP snooping is a security feature that is used in OS of a network in the layer 2. This technology prevents unauthorized DHCP servers offering IP addresses to DHCP clients.

10. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_ can access the network.

- a) MAC address
- b) IP address
- c) Both MAC address and IP address

d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: The DHCP snooping is done to prevent unauthorized IP addresses being offered by unauthorized servers. This feature allows only specific MAC addresses and IP addresses to access the network.

Computer Networks Questions & Answers –

IPSecurity

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IPSecurity".

1. IPSec is designed to provide security at the \_\_\_\_\_

- a) Transport layer
- b) Network layer
- c) Application layer
- d) Session layer

[View Answer](#)

Answer: b

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

2. In tunnel mode, IPSec protects the \_\_\_\_\_

- a) Entire IP packet
- b) IP header
- c) IP payload
- d) IP trailer

[View Answer](#)

Answer: a

Explanation: In the tunnel mode, IPSec adds control bits into the packets to encrypt the entire packet between the IPSec endpoints. Using encryption, it provides secure communication between the two endpoints.

3. Which component is included in IP security?

- a) Authentication Header (AH)
- b) Encapsulating Security Payload (ESP)
- c) Internet key Exchange (IKE)
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: AH ensures that there is no retransmission of data from an unauthorized source, and protects against data tampering. ESP provides with content protection and ensures that there is integrity and confidentiality for the message. IKE is used to make sure that only the intended sender and receiver can access the message.

4. WPA2 is used for security in \_\_\_\_\_

- a) Ethernet
- b) Bluetooth
- c) Wi-Fi
- d) Email

[View Answer](#)

Answer: c

Explanation: WPA2 or WiFi Protected Access 2 is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

5. An attempt to make a computer resource unavailable to its intended users is called \_\_\_\_\_

- a) Denial-of-service attack
- b) Virus attack
- c) Worms attack
- d) Botnet process

[View Answer](#)

Answer: a

Explanation: In a Denial of Service attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. The methods that the attacker can use are vulnerability attack, bandwidth flooding and connection flooding.

6. Extensible authentication protocol is authentication framework frequently used in \_\_\_\_\_

- a) Wired personal area network
- b) Wireless networks
- c) Wired local area network
- d) Wired metropolitan area network

[View Answer](#)

Answer: b

Explanation: The Extensible Authentication Protocol (EAP) is an authentication protocol used to connect a network node to the Internet. It designed through extending the methods used by the Point-to-Point Protocol for authentication.

7. Pretty good privacy (PGP) is used in \_\_\_\_\_

- a) Browser security
- b) Email security
- c) FTP security
- d) WiFi security

[View Answer](#)

Answer: b

Explanation: PGP is an encryption method used in e-mail security to encrypt and decrypt the content of an e-mail transmitted over the internet. It makes sure that the message cannot be stolen by other unauthorized users.

8. PGP encrypts data by using a block cipher called \_\_\_\_\_

- a) International data encryption algorithm
- b) Private data encryption algorithm
- c) Internet data encryption algorithm
- d) Local data encryption algorithm

[View Answer](#)

Answer: a

Explanation: The IDEA was designed in 1991 by Xuejia Lai and James Massey.

Before IDEA, PGP used the cipher method BassOmatic.

9. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called \_\_\_\_\_

- a) DNS lookup
- b) DNS hijacking
- c) DNS spoofing

d) DNS authorizing

[View Answer](#)

Answer: c

Explanation: In DNS spoofing, also known as DNS cache poisoning, an attacker gets the valid credentials from a victim by spoofing the intended resource, and tricking the victim to give his/her valid authorization credentials.

Computer Networks Questions & Answers –

Virtual Private Networks

[« Prev](#)

[Next »](#)

This set of Computer Networks Interview Questions and Answers focuses on "Virtual Private Networks".

1. A \_\_\_\_\_ is an extension of an enterprise's private intranet across a public network such as the internet, creating a secure private connection.

a) VNP

b) VPN

c) VSN

d) VSPN

[View Answer](#)

Answer: b

Explanation: VPN provides enhanced security and online anonymity to users on the internet. It is also used to unblock websites that are unavailable in certain regions.

2. When were VPNs introduced into the commercial world?

a) Early 80's

b) Late 80's

c) Early 90's

d) Late 90's

[View Answer](#)

Answer: d

Explanation: VPNs were first introduced in the year 1996. Then as the internet started to get popularized, the need for connection security increased. VPN was a great solution to this, and that's when VPNs were implemented in the commercial world.

3. What protocol is NOT used in the operation of a VPN?

- a) PPTP
- b) IPsec
- c) YMUM
- d) L2TP

[View Answer](#)

Answer: c

Explanation: PPTP is a tunneling protocol which was initially used for the creation of VPNs. IPSec is used in encrypting the traffic flowing in the VPN. L2TP is used to tunnel all the L2 traffic on the VPN.

4. Which of the following statements is NOT true concerning VPNs?

- a) Financially rewarding compared to leased lines
- b) Allows remote workers to access corporate data
- c) Allows LAN-to-LAN connectivity over public networks
- d) Is the backbone of the Internet

[View Answer](#)

Answer: d

Explanation: VPNs are not the backbone of the Internet as they are just a method to create private intranets on the internet. They are used for enhancing the connection security for the users.

5. Traffic in a VPN is NOT \_\_\_\_\_

- a) Invisible from public networks
- b) Logically separated from other traffic
- c) Accessible from unauthorized public networks
- d) Restricted to a single protocol in IPsec

[View Answer](#)

Answer: c

Explanation: Traffic in a VPN is not accessible from any unauthorized public networks because it is secured with the masking IP address. This provides the benefit of access to blocked resources to the users.

6. VPNs are financially speaking \_\_\_\_\_

- a) Always more expensive than leased lines
- b) Always cheaper than leased lines
- c) Usually cheaper than leased lines

- d) Usually more expensive than leased lines

[View Answer](#)

Answer: c

Explanation: The services of a VPN are cheaper for moderate to large scale institutional networks than the services of leased lines. Though for a small scale network, it does not prove to be as beneficial as the costs are not reduced to a great degree as compared to leased lines.

7. Which layer 3 protocols can be transmitted over an L2TP VPN?

- a) Only IP
- b) Only IPX
- c) Only ICMP
- d) IP and IPX

[View Answer](#)

Answer: d

Explanation: L2TP stands for Layer 2 Tunneling Protocol. It is used to tunnel all the L2 traffic on an IP network and is able to transmit network layer's IP and IPX protocol data.

8. ESP (Encapsulating Security Protocol) is defined in which of the following standards?

- a) IPsec
- b) PPTP
- c) PPP
- d) L2TP

[View Answer](#)

Answer: a

Explanation: ESP is a security component of IPSec. ESP provides content protection and ensures that there is integrity and confidentiality of the message. The other security components of IPSec are Authentication Header and Internet Key Exchange.

9. L2F was developed by which company?

- a) Microsoft
- b) Cisco
- c) Blizzard Entertainment
- d) IETF

[View Answer](#)

Answer: b

Explanation: L2F stands for Layer 2 Forwarding protocol. It was designed by Cisco to tunnel PPP traffic, helping create VPNs over the internet.

10. Which layer of the OSI reference model does PPTP work at?

- a) Layer 1
- b) Layer 2
- c) Layer 3
- d) Layer 4

[View Answer](#)

Answer: b

Explanation: PPTP stands for Point-to-Point Tunneling Protocol. PPTP is a tunneling protocol that was primitively used to create VPNs. It is no longer used for VPNs due to the lack of security it provides.

11. Which layer of the OSI reference model does IPsec work at?

- a) Layer 1
- b) Layer 2
- c) Layer 3
- d) Layer 4

[View Answer](#)

Answer: c

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. It operates in the network layer.

Computer Networks Questions & Answers –

[SMI](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Questions and Answers for Freshers focuses on "SMI".

1. Storage management comprises of \_\_\_\_\_

- a) SAN Management
- b) Data protection

- c) Disk operation
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: SAN management, data protection and disk operation are the main components of the Storage Management Initiative Specification. SMI-S was developed by the Storage Networking Industry Association.

2. Which of the following is not a storage device?

- a) Switch
- b) RAID Arrays
- c) Tape drives
- d) Hub

[View Answer](#)

Answer: d

Explanation: Switches, RAID arrays and tape drives are the main storage devices in SMI-S, while a Hub is simple networking device that cannot be used as storage.

3. Which protocols are used for Storage management?

- a) SNMP
- b) LDAP
- c) POP3
- d) MIB

[View Answer](#)

Answer: a

Explanation: Simple Network Management Protocol is used for storage management. Lightweight Directory Access Protocol is used to access or locate information about directories and other resources on a network. Post Office Protocol 3 is used for emailing on the internet. Management Information Base is a part of SNMP and contains hierarchically organized information.

4. Identify the difficulty a SAN administrator does not incur while dealing with diverse vendors.

- a) Proprietary management interfaces
- b) Multiple applications to manage storage in the data center
- c) No single view
- d) Single view

[View Answer](#)

Answer: d

Explanation: A single view is not possible with diverse vendors present. Proprietary management interfaces, multiple applications management and no single view are the main difficulties incurred by a SAN administrator in such a situation.

5. How do Storage administrators ensure secure access to storage devices?

- a) By using Zoning
- b) By putting a physical lock on the storage device
- c) By keeping devices shutdown when not in use
- d) By keeping devices when used

[View Answer](#)

Answer: a

Explanation: Zoning is a method in SAN that can be used by a storage administrator to specify who can see what in the SAN. Zoning might complicate the scaling process if the size of the SAN increases.

6. Effective Storage management does not include \_\_\_\_\_

- a) security
- b) backups
- c) reporting
- d) connection

[View Answer](#)

Answer: d

Explanation: Connection is the responsibility of the connection manager. Storage management includes management of all necessities such as security, backups and reporting facilities.

7. Among the following, identify which task is not involved in Storage Capacity management?

- a) Identifying storage systems are approaching full capacity
- b) Monitoring trends for each resource
- c) Tracking Total capacity, total used, total available
- d) Preventing unauthorized access to the storage

[View Answer](#)

Answer: d

Explanation: Prevention of unauthorized access to storage is the task of Security

management. Identifying when the storage is approaching full capacity, monitoring trends, reporting and tracking capacity are the tasks of Storage Capacity management.

8. Effect of open standards like SMI(s) is \_\_\_\_\_

- a) standardization drives software interoperability and interchange ability
- b) breaks the old-style dependence on proprietary methods, trade secrets, and single providers
- c) builds a strong foundation on which others can quickly build and innovate
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Open standards like SMI-S inculcate a general ideal through which the normal designers are able to easily implement the standard into their software and its scalability. Since it is open-source, nothing is hidden from its users and they can implement it as they like or require to. As a whole lot of time is spent to build it as strong and scalable, it provides an efficient foundation to the designers to build and innovate on.

9. Task of Distributed Management Task Force is not \_\_\_\_\_

- a) to promote interoperability among the management solution providers
- b) to act as an interface between the various budding technologies and provide solution to manage various environments
- c) to track the operation of the different management solution providers
- d) to manage the facility by itself if one of the management solution providers fail

[View Answer](#)

Answer: d

Explanation: The Distributed Management Task Force is used just to simplify the overall management of the network. It cannot manage a network facility by itself in case one of the management solution providers fails. It provides an interface for promoting interoperability among management solution providers.

10. SMI-S Standard uses which of the following?

- a) Java RMI
- b) CIM-XML/HTTP
- c) CORBA
- d) .NET

[View Answer](#)

Answer: b

Explanation: The Distributed Management Task Force maintains a Common Information Model (CIM) to represent a common set of network objects and their relationships. CIM-XML/HTTP refers to the operations of CIM being performed over HTTP or XML. SMI-S uses CIM-XML/HTTP.

Computer Networks Questions & Answers –

SNMP

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "SNMP".

1. The application-level protocol in which a few manager stations control a set of agents is called \_\_\_\_\_

- a) HTML
- b) TCP
- c) SNMP
- d) SNMP/IP

[View Answer](#)

Answer: c

Explanation: SNMP stands for Simple Network Management Protocol. It is an application-level protocol in which a few manager stations control a set of agents. It is used under the TCP/IP protocol suite and is used for managing devices on the internet.

2. Full duplex mode increases the capacity of each domain by \_\_\_\_\_

- a) 10 to 20 mbps
- b) 20 to 30 mbps
- c) 30 to 40 mbps
- d) 40 to 50 mbps

[View Answer](#)

Answer: a

Explanation: In full duplex mode, both endpoints share a single channel bandwidth to achieve two-way transmission. This results in complete utilization of the band capacity increasing the capacity by 10 to 20 mbps than half-duplex mode.

3. Configuration management can be divided into which two subsystems?

- a) Reconfiguration and documentation
- b) Management and configuration
- c) Documentation and dialing up
- d) Configuration and dialing up

[View Answer](#)

Answer: a

Explanation: The best current practices report is created by a management group to ensure the most effective configuration management. The group also makes a MIB (Management Information Base) module to help with the configuration management.

4. To use a Simple Network Management System, we need \_\_\_\_\_

- a) Servers
- b) IP
- c) Protocols
- d) Rules

[View Answer](#)

Answer: d

Explanation: Rules are a collection of expression containing parameters to observe the attributes of the user's device, and then execute some actions. It specifies the parameters for the managed objects inside the application and performs operations that would support the expression. The input of a rule may be many expressions or even a single expression that end in an output of single object invoking some action.

5. The main difference between SNMPv3 and SNMPv2 is \_\_\_\_\_

- a) Management
- b) Integration
- c) Classification
- d) Enhanced security

[View Answer](#)

Answer: d

Explanation: SNMPv3 has introduced new cryptographic security, through which confidentiality is provided by encrypting packets and blocking intruders. It also ensures that the message is coming from a reliable source.

6. In Network Management System, the division that is responsible for controlling access to network based on a predefined policy is called \_\_\_\_\_

- a) Fault Management
- b) Secured Management
- c) Active Management
- d) Security Management

[View Answer](#)

Answer: d

Explanation: Security management is also responsible to provide confidentiality, authentication and encryption in addition to controlling access to network. Without security management, the network and its traffic would be vulnerable to be exploited by attackers.

7. BER stands for \_\_\_\_\_

- a) Basic Encoding Rules
- b) Basic Encoding Resolver
- c) Basic Encoding Rotator
- d) Basic Encoding Router

[View Answer](#)

Answer: a

Explanation: The Basic Encoding Rules are a set of rules that specify the guidelines to encode the SNMP messages in binary form. Each SNMP message is encoded into 3 parts namely data, length and type of message.

8. Control of the users' access to network resources through charges is the main responsibility of \_\_\_\_\_

- a) Reactive Fault Management
- b) Reconfigured Fault Management
- c) Accounting Management
- d) Security Management

[View Answer](#)

Answer: c

Explanation: The accounting management keeps track of the users and their access rights to the network and controls the user's access by communicating with the security management. The accounting management takes support of the Management Information Block to perform its operations.

9. SNMP is the framework for managing devices in an internet using the \_\_\_\_\_

- a) TCP/IP protocol
- b) UDP
- c) SMTP

d) None

[View Answer](#)

Answer: a

Explanation: SNMP is a management protocol in which a few manager stations control a set of agents using the TCP/IP protocol suite. SNMP stands for Simple Network Management Protocol.

10. Structure of Management Information (SMI), is the guideline of \_\_\_\_\_

a) HTTP

b) SNMP

c) URL

d) MIB

[View Answer](#)

Answer: b

Explanation: SMI was developed by the Storage Networking Industry Association (SNIA) and it defines a standard that can be manipulated by SNMP. Basically, it defines the standard format and hierarchy of management data which is used by the SNMP. It does not describe how the objects are to be managed.

Computer Networks Questions & Answers –

Telnet – 1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Telnet – 1".

1. The application layer protocol used by a Telnet application is \_\_\_\_\_

a) Telnet

b) FTP

c) HTTP

d) SMTP

[View Answer](#)

Answer: a

Explanation: Telnet is an application layer protocol that provides access to the command-line interface on a remote host. Telnet stands for teletype network.

2. Which amongst the following statements is correct for "character at a time" mode?

- a) Character processing is done on the local system under the control of the remote system
- b) Most text typed is immediately sent to the remote host for processing
- c) All text is echoed locally, only completed lines are sent to the remote host
- d) All text is processed locally, and only confirmed lines are sent to the remote host

[View Answer](#)

Answer: b

Explanation: In character at a time mode, the typed text is sent immediately to the remote host while the user is typing. Another mode used in Telnet is "Old line by line" mode in which only completed lines are sent to the remote host.

3. \_\_\_\_\_ allows you to connect and login to a remote computer

- a) Telnet
- b) FTP
- c) HTTP
- d) SMTP

[View Answer](#)

Answer: a

Explanation: Telnet provides access to the command-line interface on a remote computer. One can login to the computer from the command-line interface.

4. What is the correct syntax to be written in the web browser to initiate a Telnet connection to www.sanfoundry.com?

- a) telnet//www.sanfoundry.com
- b) telnet:www.sanfoundry.com
- c) telnet://www.sanfoundry.com
- d) telnet www.sanfoundry.com

[View Answer](#)

Answer: c

Explanation: telnet://" is the header to be used to initiate a Telnet connection to a web server. One can browse the website using telnet if they are authorized to.

5. Telnet is used for \_\_\_\_\_

- a) Television on net
- b) Network of Telephones
- c) Remote Login

d) Teleshopping site

[View Answer](#)

Answer: c

Explanation: Telnet is an application layer protocol that provides access to the command line interface of a remote computer that can be used to perform remote login.

6. Which one of the following is not correct?

- a) telnet is a general purpose client-server program
- b) telnet lets user access an application on a remote computer
- c) telnet can also be used for file transfer
- d) telnet can be used for remote login

[View Answer](#)

Answer: c

Explanation: File Transfer Protocol is used for file transfer. Telnet provides access to the command-line interface on a remote host.

7. Which operating mode of telnet is full duplex?

- a) default mode
- b) server mode
- c) line mode
- d) character mode

[View Answer](#)

Answer: c

Explanation: In line mode, terminal character processing is done on the client side but editing is enabled on the server side. Line mode reduces the number of packets and is useful for long delay networks.

8. If we want that a character be interpreted by the client instead of server \_\_\_\_\_

- a) interpret as command (IAC) escape character has to be used
- b) control functions has to be disabled
- c) it is not possible
- d) cli character has to be used

[View Answer](#)

Answer: a

Explanation: The client must look at each byte that arrives and look for IAC escape character. If IAC is found, the client moves on to look for any other code or IAC. If

the next byte is IAC – a single byte is presented by the client to the terminal. If IAC is followed by any other code than IAC, the client interprets this as a command.

Computer Networks Questions & Answers –

Telnet – 2

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Telnet – 2".

1. Telnet protocol is used to establish a connection to \_\_\_\_\_

- a) TCP port number 21
- b) TCP port number 22
- c) TCP port number 23
- d) TCP port number 25

[View Answer](#)

Answer: c

Explanation: TCP port 21 is used for FTP, TCP port 22 is used for SSH and TCP port 25 is used for SMTP. Telnet provides access to a command line interface on a remote computer using the TCP port number 23.

2. Which one of the following is not true?

- a) telnet defines a network virtual terminal (NVT) standard
- b) client programs interact with NVT
- c) server translates NVT operations
- d) client can transfer files using to remote server using NVT

[View Answer](#)

Answer: d

Explanation: The client can use the NVT only to interact with the programs already present on the remote server, not to transfer files to it. To transfer files, an FTP connection has to be used.

3. All telnet operations are sent as \_\_\_\_\_

- a) 4 bits
- b) 8 bits
- c) 16 bits

d) 32 bits

[View Answer](#)

Answer: b

Explanation: Telnet provides a bi-directional, 8-bit byte oriented communications facility through which operations are sent as 8-bit bytes for the server to interpret.

4. AbsoluteTelnet is a telnet client for \_\_\_\_\_ Operating system.

a) windows

b) linux

c) mac

d) ubuntu

[View Answer](#)

Answer: a

Explanation: AbsoluteTelnet was originally released in 1999. It was developed by Brian Pence of Celestial Software.

5. The decimal code of Interpret as Command (IAC) character is \_\_\_\_\_

a) 252

b) 253

c) 254

d) 255

[View Answer](#)

Answer: d

Explanation: If we want that a character be interpreted by the client instead of server, we use the IAC character. If IAC is followed by any other code than IAC, the client interprets it as a character.

6. Which of the following is true for character mode operation of telnet implementation?

a) each character typed is sent by the client to the server

b) each character typed is discarded by the server

c) each character typed is aggregated into a word and then sent to the server

d) each character type is aggregated into a line and then sent to the server

[View Answer](#)

Answer: a

Explanation: In character mode, each character that the user is typing is immediately

sent to the server which then interprets it only after the complete operation command is received.

7. In which mode of telnet, the client echoes the character on the screen but does not send it until a whole line is completed?

- a) default mode
- c) character mode
- c) server mode
- d) command mode

[View Answer](#)

Answer: a

Explanation: In the default mode, the client does not send each character typed by the user to the server, thus saving the amount of packet transmissions required for executing each operation. But the server has to remain idle until the client sends the completed line wasting a lot of time.

8. Which one of the following is not correct?

- a) telnet is a general purpose client-server program
- b) telnet lets user access an application on a remote computer
- c) telnet can also be used for file transfer
- d) telnet can be used for remote login

[View Answer](#)

Answer: c

Explanation: File Transfer Protocol is used for file transfer. Telnet provides access to the command-line interface on a remote host.

Computer Networks Questions & Answers –

TCP-1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "TCP-1".

1. Which of the following is false with respect to TCP?

- a) Connection-oriented
- b) Process-to-process

c) Transport layer protocol

d) Unreliable

[View Answer](#)

Answer: d

Explanation: TCP is a transport layer protocol that provides reliable and ordered delivery of a stream of bytes between hosts communicating via an IP network.

2. In TCP, sending and receiving data is done as \_\_\_\_\_

a) Stream of bytes

b) Sequence of characters

c) Lines of data

d) Packets

[View Answer](#)

Answer: a

Explanation: TCP provides stream oriented delivery between hosts communicating via an IP network and there are no message boundaries. TCP can concatenate data from a number of send () commands into one stream of data and still transmit it reliably.

3. TCP process may not write and read data at the same speed. So we need \_\_\_\_\_ for storage.

a) Packets

b) Buffers

c) Segments

d) Stacks

[View Answer](#)

Answer: b

Explanation: A TCP receiver has a receive buffer that is used to store the unprocessed incoming packets in case the sender is sending packets faster than the processing rate of the received packets.

4. TCP groups a number of bytes together into a packet called \_\_\_\_\_

a) Packet

b) Buffer

c) Segment

d) Stack

[View Answer](#)

Answer: c

Explanation: A segment may be collection of data from many send () statements. TCP transmits each segment as a stream of bytes.

5. Communication offered by TCP is \_\_\_\_\_

- a) Full-duplex
- b) Half-duplex
- c) Semi-duplex
- d) Byte by byte

[View Answer](#)

Answer: a

Explanation: Data can flow both the directions at the same time during a TCP communication hence, it is full-duplex. This is the reason why TCP is used in systems that require full-duplex operation such as e-mail systems.

6. To achieve reliable transport in TCP, \_\_\_\_\_ is used to check the safe and sound arrival of data.

- a) Packet
- b) Buffer
- c) Segment
- d) Acknowledgment

[View Answer](#)

Answer: d

Explanation: Acknowledgment mechanism is used to check the safe and sound arrival of data. The sender actively checks for acknowledgement from the receiver and once a specific time period has passed, it retransmits the data.

7. In segment header, sequence number and acknowledgement number fields refer to \_\_\_\_\_

- a) Byte number
- b) Buffer number
- c) Segment number
- d) Acknowledgment

[View Answer](#)

Answer: a

Explanation: As TCP has to ensure ordered delivery of packets, sequence number and

acknowledgement number are used to identify the byte number of the packet in the stream of bytes being transmitted.

8. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?

- a) 10000
- b) 10001
- c) 12001
- d) 11001

[View Answer](#)

Answer: b

Explanation: The sequence number given to first byte of a segment, with respect to its order among the previous segments, is the sequence number of that segment.

9. Bytes of data being transferred in each connection are numbered by TCP. These numbers start with a \_\_\_\_\_

- a) Fixed number
- b) Random sequence of 0's and 1's
- c) One
- d) Sequence of zero's and one's

[View Answer](#)

Answer: d

Explanation: One might expect the sequence number of the first byte in the stream to be 0, or 1. But that does not happen in TCP. Instead, the sender has to choose an Initial Sequence Number (ISN), which is basically a random 32 bit sequence of 0's and 1's, during the connection handshake.

10. The value of acknowledgement field in a segment defines \_\_\_\_\_

- a) sequence number of the byte received previously
- b) total number of bytes to receive
- c) sequence number of the next byte to be received
- d) sequence of zeros and ones

[View Answer](#)

Answer: c

Explanation: The acknowledgement field in a segment defines the sequence number of the byte which is to be received next i.e. sequence number of byte that the sender should transmit next.

## Computer Networks Questions & Answers –

TCP-2

[« Prev](#)

[Next »](#)

This set of Computer Networks Interview Questions and Answers for freshers focuses on “TCP – 2”.

1. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as \_\_\_\_\_

- a) Flow control
- b) Error control
- c) Congestion control
- d) Error detection

[View Answer](#)

Answer: a

Explanation: Flow control is done to prevent the receiver from being overflowed with data. It is done using various open-loop (prevention) methods and closed-loop (recovery) methods.

2. Size of TCP segment header ranges between \_\_\_\_\_

- a) 16 and 32 bytes
- b) 16 and 32 bits
- c) 20 and 60 bytes
- d) 20 and 60 bits

[View Answer](#)

Answer: c

Explanation: The size of the header can be 20 bytes at a minimum if there are no options and can go up to 60 bytes at maximum with 40 bytes in the options field. The header contains all the control information required to ensure ordered, error-free and reliable delivery of the segment.

3. Connection establishment in TCP is done by which mechanism?

- a) Flow control
- b) Three-Way Handshaking
- c) Forwarding

d) Synchronization

[View Answer](#)

Answer: b

Explanation: A three-way handshake allows both, the server and the client to choose their Initial Sequence Number and inform about it to the other party. This won't be possible using the two-way handshake mechanism.

4. The server program tells its TCP that it is ready to accept a connection. This process is called \_\_\_\_\_

- a) Active open
- b) Active close
- c) Passive close
- d) Passive open

[View Answer](#)

Answer: d

Explanation: This is the first step in the Three-Way Handshaking process and is started by the server. Then the Client picks an ISN (Initial Sequence Number) and synchronizes (shares) it with the Server requesting a connection. The Server acknowledges the clients ISN, and then picks an ISN and synchronizes it with the Client. At last, the Client acknowledges the servers ISN.

5. A client that wishes to connect to an open server tells its TCP that it needs to be connected to that particular server. The process is called \_\_\_\_\_

- a) Active open
- b) Active close
- c) Passive close
- d) Passive open

[View Answer](#)

Answer: a

Explanation: This is the second step in the Three-Way Handshaking process and is done by the client once it finds the open server and picks an ISN. The Server acknowledges the clients request, and then picks an ISN and synchronizes it with the Client. At last, the Client acknowledges the servers ISN.

6. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is \_\_\_\_\_

- a) Mutual open

- b) Mutual Close
- c) Simultaneous open
- d) Simultaneous close

[View Answer](#)

Answer: c

Explanation: In simultaneous open situation, two nodes send an SYN signal to each other and start a TCP connection. Here, both TCP nodes transmit a SYNC+ACK segment to each other and a connection is established between them. This doesn't happen usually, because both sides have to know which port on the other side to send to.

7. A malicious attacker sends a large number of SYNC segments to a server, pretending that each of them is coming from a different client by faking the source IP address in the datagram. Which type of attack is being performed in this situation?

- a) SYNC flooding attack
- b) Active attack
- c) Passive attack
- d) Denial-of-service attack

[View Answer](#)

Answer: a

Explanation: SYNC flooding attack is a form of Denial of Service attack. Due to the overflow of SYNC segments sent to the server, the victims are not able to request for a connection to the server, thus resulting in Denial of Service.

8. SYNC flooding attack belongs to a type of security attack known as \_\_\_\_\_

- a) SYNC flooding attack
- b) Active attack
- c) Passive attack
- d) Denial-of-service attack

[View Answer](#)

Answer: d

Explanation: During SYNC flooding the system collapses and denies service to every request, making it a DoS attack. Some other DoS attacks are bandwidth flooding, connection flooding and UDP flooding.

9. The sizes of source and destination port address in TCP header are \_\_\_\_\_ respectively.

- a) 16-bits and 32-bits
- b) 16-bits and 16-bits

- c) 32-bits and 16-bits
- d) 32-bits and 32-bits

[View Answer](#)

Answer: b

Explanation: All port addresses are of 16 bits and they specify the type of service being used by the network entity. For example, port 21 is used for FTP connections and port 25 is used for ICMP connections.

10. What allows TCP to detect lost segments and in turn recover from that loss?

- a) Sequence number
- b) Acknowledgment number
- c) Checksum
- d) Both Sequence & Acknowledgment number

[View Answer](#)

Answer: b

Explanation: TCP header contains separate fields for sequence number and acknowledgment number. Comparing these values is what allows TCP to detect lost segments and in turn recover from that loss. After detecting the lost segments, the recovery may require retransmission of the lost segments of data.

Computer Networks Questions & Answers –

UDP

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “UDP”.

1. Which of the following is false with respect to UDP?

- a) Connection-oriented
- b) Unreliable
- c) Transport layer protocol
- d) Low overhead

[View Answer](#)

Answer: a

Explanation: UDP is an unreliable, connectionless transport layer protocol that

provides message-based data transmission. TCP is an example of connection-oriented protocols.

2. Return value of the UDP port "Chargen" is \_\_\_\_\_

- a) String of characters
- b) String of integers
- c) Array of characters with integers
- d) Array of zero's and one's

[View Answer](#)

Answer: a

Explanation: Using Chargen with UDP on port 19, the server sends a UDP datagram containing a random number of characters every time it receives a datagram from the connecting host. The number of characters is between 0 and 512.

3. Beyond IP, UDP provides additional services such as \_\_\_\_\_

- a) Routing and switching
- b) Sending and receiving of packets
- c) Multiplexing and demultiplexing
- d) Demultiplexing and error checking

[View Answer](#)

Answer: d

Explanation: De-multiplexing is the delivering of received segments to the correct application layer processes at the recipients end using UDP. Error checking is done through checksum in UDP.

4. What is the main advantage of UDP?

- a) More overload
- b) Reliable
- c) Low overhead
- d) Fast

[View Answer](#)

Answer: c

Explanation: As UDP does not provide assurance of delivery of packet, reliability and other services, the overhead taken to provide these services is reduced in UDP's operation. Thus, UDP provides low overhead, and higher speed.

5. Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_

- a) 161

- b) 123
- c) 162
- d) 124

[View Answer](#)

Answer: b

Explanation: The Network Time Protocol is a clock synchronization network protocol implemented by using UDP port number 123 to send and receive time stamps.

6. What is the header size of a UDP packet?

- a) 8 bytes
- b) 8 bits
- c) 16 bytes
- d) 124 bytes

[View Answer](#)

Answer: a

Explanation: The fixed size of the UDP packet header is 8 bytes. It contains four two-byte fields: Source port address, Destination port address, Length of packet, and checksum.

7. The port number is "ephemeral port number", if the source host is \_\_\_\_\_

- a) NTP
- b) Echo
- c) Server
- d) Client

[View Answer](#)

Answer: d

Explanation: Port numbers from 1025 to 5000 are used as ephemeral port numbers in Windows Operating System. Ephemeral port numbers are short-lived port numbers which can be used for clients in a UDP system where there are temporary clients all the time.

8. "Total length" field in UDP packet header is the length of \_\_\_\_\_

- a) Only UDP header
- b) Only data
- c) Only checksum
- d) UDP header plus data

[View Answer](#)

Answer: d

Explanation: Total length is the 16 bit field which contains the length of UDP header and the data. The maximum value of the Total length field and the maximum size of a UDP datagram is 65,535 bytes (8 byte header + 65,527 bytes of data).

9. Which is the correct expression for the length of UDP datagram?

- a) UDP length = IP length – IP header's length
- b) UDP length = UDP length – UDP header's length
- c) UDP length = IP length + IP header's length
- d) UDP length = UDP length + UDP header's length

[View Answer](#)

Answer: a

Explanation: A user datagram is encapsulated in an IP datagram. There is a field in the IP header that defines the total length of the IP packet. There is another field in the IP header that defines the length of the header. So if we subtract the length of the IP header that is encapsulated in the IP packet, we get the length of UDP datagram.

10. The \_\_\_\_\_ field is used to detect errors over the entire user datagram.

- a) udp header
- b) checksum
- c) source port
- d) destination port

[View Answer](#)

Answer: b

Explanation: Checksum field is used to detect errors over the entire user datagram. Though it is not as efficient as CRC which is used in TCP, it gets the job done for the UDP datagram as UDP doesn't have to ensure the delivery of the packet.

Computer Networks Questions & Answers –

AH and ESP Protocols

[« Prev](#)

[Next »](#)

This set of Computer Networks Questions and Answers for Experienced people focuses on "AH and ESP Protocols".

1. Which mode of IPsec should you use to assure the security and confidentiality of data within the same LAN?

- a) AH transport mode
- b) ESP transport mode
- c) ESP tunnel mode
- d) AH tunnel mode

[View Answer](#)

Answer: b

Explanation: ESP transport mode should be used to ensure the integrity and confidentiality of data that is exchanged within the same LAN. ESP tunnel mode is comparatively more secure and should be used to assure the security of the data within different LANs.

2. Which two types of encryption protocols can be used to secure the authentication of computers using IPsec?

- a) Kerberos V5
- b) SHA
- c) MD5
- d) Both SHA and MD5

[View Answer](#)

Answer: d

Explanation: SHA or MD5 can be used. Kerberos V5 is an authentication protocol, not an encryption protocol; therefore, answer A is incorrect. Certificates are a type of authentication that can be used with IPsec, not an encryption protocol; therefore, answer B is incorrect.

3. Which two types of IPsec can be used to secure communications between two LANs?

- a) AH tunnel mode
- b) ESP tunnel mode
- c) Both AH tunnel mode and ESP tunnel mode
- d) ESP transport mode

[View Answer](#)

Answer: c

Explanation: The AH and ESP tunnel mode IPsec should be used for data transfer purpose, option d is for integrity & confidentiality purpose. Tunnel mode provides security for the entire original IP packet unlike transport mode which is not as secure as it only encrypts the data portion and not the whole packet.

4. \_\_\_\_\_ provides authentication at the IP level.

- a) AH
- b) ESP
- c) PGP
- d) SSL

[View Answer](#)

Answer: a

Explanation: The Authentication Header (AH) authenticates the origin of data, and guarantees the integrity of the information that's being sent using IPSec. It also provides anti-reply security.

5. IPsec defines two protocols: \_\_\_\_\_ and \_\_\_\_\_

- a) AH; SSL
- b) PGP; ESP
- c) AH; ESP
- d) PGP; SSL

[View Answer](#)

Answer: c

Explanation: AH ensures that there is no retransmission of data from an unauthorized source, and protects against data tampering. ESP provides with content protection and ensures that there is integrity and confidentiality for the message.

6. IP Security operates in which layer of the OSI model?

- a) Network
- b) Transport
- c) Application
- d) Physical

[View Answer](#)

Answer: a

Explanation: IPSec is a set of protocols used to provide authentication, data integrity and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

7. ESP does not provide \_\_\_\_\_

- a) source authentication
- b) data integrity
- c) privacy

d) error control

[View Answer](#)

Answer: d

Explanation: The ESP provides data confidentiality, integrity and authentication. It provides confidentiality through encryption. ESP can operate in two modes, transport mode and tunnel mode.

8. In computer security \_\_\_\_\_ means that computer system assets can be modified only by authorized parties.

- a) confidentiality
- b) integrity
- c) availability
- d) authenticity

[View Answer](#)

Answer: b

Explanation: Integrity means that computer system assets can be modified only by authorized parties. Confidentiality means that the assets can only be accessed by authorized parties. Availability refers to the accessibility of the resource to the authorized parties. Authenticity means that the asset is not unethically changed.

9. In computer security \_\_\_\_\_ means that the information in a computer system only be accessible for reading by authorized parties.

- a) confidentiality
- b) integrity
- c) availability
- d) authenticity

[View Answer](#)

Answer: a

Explanation: Confidentiality means that the assets can only be accessed by authorized parties. Integrity means that computer system assets can be modified only by authorized parties. Availability refers to the accessibility of the resource to the authorized parties. Authenticity means that the asset is not unethically changed.

10. Which of the following organizations is primarily concerned with military encryption systems?

- a) NSA
- b) NIST
- c) IEEE

d) ITU

[View Answer](#)

Answer: a

Explanation: The NSA is primarily responsible for military encryption systems. The NSA designs evaluates, and implements encryption systems for the military and government agencies with high security needs.

Computer Networks Questions & Answers –

Congestion Control

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Congestion Control".

1. Two broad categories of congestion control are

- a) Open-loop and Closed-loop
- b) Open-control and Closed-control
- c) Active control and Passive control
- d) Active loop and Passive loop

[View Answer](#)

Answer: a

Explanation: Open loop congestion control techniques are used to prevent congestion before it even happens by enforcing certain policies. Closed loop congestion control techniques are used to treat congestion after it has happened.

2. In open-loop control, policies are applied to \_\_\_\_\_

- a) Remove after congestion occurs
- b) Remove after sometime
- c) Prevent before congestion occurs
- d) Prevent before sending packets

[View Answer](#)

Answer: c

Explanation: Open loop congestion control techniques are used to prevent congestion before it even happens by enforcing certain policies. Retransmission policy, window policy and acknowledgement policy are some policies that might be enforced.

3. Retransmission of packets must not be done when \_\_\_\_\_

- a) Packet is lost
- b) Packet is corrupted
- c) Packet is needed
- d) Packet is error-free

[View Answer](#)

Answer: d

Explanation: Retransmission refers to the sender having to resend the packet to the receiver. It needs to be done only when some anomaly occurs with the packet like when the packet is lost or corrupted.

4. In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends \_\_\_\_\_

- a) Packet which are not lost
- b) Only those packets which are lost or corrupted
- c) Packet from starting
- d) All the packets

[View Answer](#)

Answer: b

Explanation: In Selective Repeat, the sender side uses a searching algorithm to find the packets which need to be retransmitted based on the negative acknowledgements received and then resends only those packets thus saving bandwidth.

5. Discarding policy is mainly done by \_\_\_\_\_

- a) Sender
- b) Receiver
- c) Router
- d) Switch

[View Answer](#)

Answer: c

Explanation: The discarding policy adopted by the routers mainly states that the routers discard sensitive or corrupted packets that it receives, thus controlling the integrity of the packet flow. The discarding policy is adopted as an open loop congestion control technique.

6. Closed-Loop control mechanisms try to \_\_\_\_\_

- a) Remove after congestion occurs
- b) Remove after sometime
- c) Prevent before congestion occurs
- d) Prevent before sending packets

[View Answer](#)

Answer: a

Explanation: In closed loop congestion control, methods are implemented to remove congestion after it occurs. Some of the methods used are backpressure and choke packet.

7. The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as \_\_\_\_\_

- a) Admission policy
- b) Backpressure
- c) Forward signaling
- d) Backward signaling

[View Answer](#)

Answer: b

Explanation: In this closed loop congestion control technique, the congested node propagates in the opposite direction of the data flow to inform the predecessor node to reduce the flow of packets. This is why this technique is called a node-to-node congestion control technique.

8. Backpressure technique can be applied only to \_\_\_\_\_

- a) Congestion networks
- b) Closed circuit networks
- c) Open circuit networks
- d) Virtual circuit networks

[View Answer](#)

Answer: d

Explanation: In Virtual circuit networks, each node knows the upstream node from which a flow data is coming. So, it makes possible for the congested node to track the source of the congestion and then inform that node to reduce the flow to remove congestion.

9. The packet sent by a node to the source to inform it of congestion is called \_\_\_\_\_

- a) Explicit
- b) Discard

- c) Choke
- d) Backpressure

[View Answer](#)

Answer: c

Explanation: Choke packet is sent by a node to the source to inform it of congestion. Two choke packet techniques can be used for the operation called hop-by-hop choke packet and source choke packet.

10. In the slow-start algorithm, the size of the congestion window increases \_\_\_\_\_ until it reaches a threshold.

- a) exponentially
- b) additively
- c) multiplicatively
- d) suddenly

[View Answer](#)

Answer: a

Explanation: In slow-start algorithm, the size of the congestion window increases exponentially until it reaches a threshold. When it reaches the threshold, it stops increasing and continues sending packets through the threshold window thus preventing congestion.

11. In the congestion avoidance algorithm, the size of the congestion window increases \_\_\_\_\_ until congestion is detected.

- a) exponentially
- b) additively
- c) multiplicatively
- d) suddenly

[View Answer](#)

Answer: b

Explanation: In the congestion avoidance algorithm, the size of the congestion window increases additively until congestion is detected. Once congestion is detected, the size of congestion window is decreased once and then the packets are transmitted to achieve congestion avoidance.

## Computer Networks Questions & Answers –

### Virtual Circuit

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Virtual Circuit".

1. Which of the following is not a characteristic of Virtual Circuit Network?
  - a) There are setup and teardown phases in addition to the data transfer phase
  - b) Resources can be allocated during setup phase or on demand
  - c) All packets follow the same path established during the connection
  - d) Virtual circuit network is implemented in application layer

[View Answer](#)

Answer: d

Explanation: Virtual circuit network is normally implemented in data link layer. It is a combination of circuit-switched network and datagram network which are implemented in the physical layer and network layer respectively.

2. The address that is unique in the scope of the network or internationally if the network is part of an international network is called as \_\_\_\_\_

- a) Global address
- b) Network address
- c) Physical address
- d) IP address

[View Answer](#)

Answer: a

Explanation: Global address is a network address that is unique internationally and is used as a common address by all the users of the network. It is used to create a virtual circuit identifier.

3. The Identifier that is used for data transfer in virtual circuit network is called \_\_\_\_\_

- 
- a) Global address
  - b) Virtual circuit identifier
  - c) Network identifier

d) IP identifier

[View Answer](#)

Answer: b

Explanation: A virtual circuit identifier is a type of numeric identifying address that is used to distinguish between different virtual circuits in a circuit-switched network. It is used for data transfer and has a switch scope.

4. Which of the following is not a phase of virtual circuit network?

- a) Setup phase
- b) Data transfer phase
- c) Termination phase
- d) Teardown phase

[View Answer](#)

Answer: c

Explanation: There are three phases in a virtual circuit network: setup, data transfer and teardown phase. There is no termination phase in it.

5. Steps required in setup process are \_\_\_\_\_

- a) Setup request and acknowledgement
- b) Setup request and setup response
- c) Setup request and setup termination
- d) Setup and termination steps

[View Answer](#)

Answer: a

Explanation: Setup request (sent by a source) and acknowledgement (sent by the destination) are the steps in the setup process. Both the ends' switches make table entries during the setup process.

6. During teardown phase, the source, after sending all the frames to destination, sends a \_\_\_ to notify termination.

- a) teardown response
- b) teardown request
- c) termination request
- d) termination response

[View Answer](#)

Answer: b

Explanation: The source, after sending all the frames to destination sends teardown request to which, destination sends teardown response. The switches then delete the corresponding table entries.

7. Delay of the resource allocated during setup phase during data transfer is \_\_\_\_\_

- a) constant
- b) increases for each packet
- c) same for each packet
- d) different for each packet

[View Answer](#)

Answer: c

Explanation: If a resource is allocated during setup phase, delay is same for each packet as there is only one-time delay during the setup phase and no delay during the data transfer phase.

8. Delay of the resource allocated on demand during data transfer is \_\_\_\_\_

- a) constant
- b) increases for each packet
- c) same for each packet
- d) different for each packet

[View Answer](#)

Answer: d

Explanation: If a resource is to be allocated on demand during the data transfer phase, the delay for each packet would be different depending upon the resource requirement of the packets.

9. In virtual circuit network, the number of delay times for setup and teardown respectively are \_\_\_\_\_

- a) 1 and 1
- b) 1 and 2
- c) 2 and 1
- d) 2 and 2

[View Answer](#)

Answer: a

Explanation: There is one-time delay for both setup and teardown phase. The onetime delay in setup phase is for resource allocation and the one-time delay in teardown phase is for the de-allocation of the resources.

10. In data transfer phase, how many columns does the table contain?

- a) 1
- b) 2
- c) 3
- d) 4

[View Answer](#)

Answer: d

Explanation: The switch maintains a table for each Virtual Circuit Network. In the data transfer phase, it maintains 2 columns each for incoming data and outgoing data. The columns are in the following order: Source port, Source VCI, Destination port, Destination VCI.

1.

Computer Networks Questions & Answers –

ATM & Frame Relay

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "ATM & Frame Relay".

1. ATM and frame relay are \_\_\_\_\_

- a) virtual circuit networks
- b) datagram networks
- c) virtual private networks
- d) virtual public networks

[View Answer](#)

Answer: a

Explanation: ATM and frame relay are transmission modes in which information is transferred through electric circuit layer as packets. ATM has fixed packet size and frame relay has variable packet size.

2. ATM uses \_\_\_\_\_

- a) asynchronous frequency division multiplexing
- b) asynchronous time division multiplexing

- c) asynchronous space division multiplexing
- d) asynchronous amplitude division multiplexing

[View Answer](#)

Answer: b

Explanation: ATM uses a constant data stream consisting of transmission cells to transmit information in a fixed division of time. The packet size remains fixed.

3. ATM standard defines \_\_\_\_\_ layers.

- a) 2
- b) 3
- c) 4
- d) 5

[View Answer](#)

Answer: b

Explanation: The three layers are physical layer, ATM layer and application adoption layer. The physical layer corresponds to the physical layer, ATM layer corresponds to the data link layer and the AAL layer corresponds to the network layer of the OSI model.

4. ATM can be used for \_\_\_\_\_

- a) local area network
- b) wide area network
- c) campus area network
- d) networks covering any range

[View Answer](#)

Answer: d

Explanation: ATM is a connection oriented network for cell relay which can be implemented for networks covering any area. It uses Time Division Multiplexing and supports voice, video and data communications.

5. An ATM cell has the payload field of \_\_\_\_\_

- a) 32 bytes
- b) 48 bytes
- c) 64 bytes
- d) 128 bytes

[View Answer](#)

Answer: b

Explanation: An ATM field contains a header and a payload. The header is of 5 bytes and the payload is of 48 bytes. The size of the header remains fixed.

6. Frame relay has error detection at the \_\_\_\_\_

- a) physical layer
- b) data link layer
- c) network layer
- d) transport layer

[View Answer](#)

Answer: b

Explanation: The Frame Relay header contains an 8-bit Header Error Control field (HEC). The HEC field contains an 8-bit CRC which is used for error control.

7. Virtual circuit identifier in frame relay is called \_\_\_\_\_

- a) data link connection identifier
- b) frame relay identifier
- c) cell relay identifier
- d) circuit connection identifier

[View Answer](#)

Answer: a

Explanation: The Data Link Connection Identifier is 10-bit virtual circuit identifier. It is used to assign frames to the specified Permanent Virtual Circuits or Switched Virtual Circuits.

8. Frame relay has \_\_\_\_\_

- a) only physical layer
- b) only data link layer
- c) only network layer
- d) both physical and data link layer

[View Answer](#)

Answer: d

Explanation: The physical layer is guided by the protocols recognized by the ANSI. The data link layer supports the simplified core functions specified by the OSI model.

9. In frame relay networks, extended address is used \_\_\_\_\_

- a) to increase the range of data link connection identifiers

- b) for error detection
- c) for encryption
- d) for error recovery

[View Answer](#)

Answer: a

Explanation: Extended address is indicated by the last bit of every address byte in the DLCI. It specifies whether the byte is the last in the addressing field. It is used to increase the range of data link connection identifiers.

10. What is FRAD in frame relay network?

- a) FRAD assembles and disassembles the frames coming from other protocols
- b) FRAD is used for modulation and demodulation
- c) FRAD is used for error detection
- d) FRAD is used for error recovery

[View Answer](#)

Answer: a

Explanation: FRAD stands for Frame Relay Assembler/Disassembler. It converts packets into frames that can be transmitted over Frame Relay Networks. It operates at the physical layer.

Computer Networks Questions & Answers –

Frame Relay

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Frame Relay”.

1. Frame Relay is cheaper than other \_\_\_\_

- a) LANs
- b) WANs
- c) MANs
- d) Multipoint Networks

[View Answer](#)

Answer: b

Explanation: Frame relay is a standardized wide area network technology and is

popularly used because it is cheaper than leased line WANs. It is also very simple to configure user equipment in a Frame Relay network.

2. Frame Relay networks offer an option called \_\_\_\_\_

- a) Voice Over For Relay
- b) Voice Over Fine Relay
- c) Voice On Frame Relay
- d) Voice Over Frame Relay

[View Answer](#)

Answer: d

Explanation: Frame Relay networks offer an option called Voice over Frame Relay, which transmits voice and voice-band data over a Frame Relay network. It has two sub-protocols FRF11 and FRF12.

3. There are \_\_\_\_\_ total features of Frame Relay.

- a) Five
- b) Seven
- c) Nine
- d) Ten

[View Answer](#)

Answer: c

Explanation: Frame relay is a wide area network technology used to transmit information over a network in the form of frames using relays. The frames are of variable size. It is cheaper than other WANs and it's simple to configure user equipment in the network.

4. Frame Relay does not provide flow or error control, they must be provided by the \_\_\_\_\_

- a) Lower Level Protocol
- b) Highest Level Protocol
- c) Upper Level Protocol
- d) Lowest Level Protocol

[View Answer](#)

Answer: c

Explanation: Frame relay only provides error detection using CRC. If errors are detected, the upper-layer protocols, such as TCP are expected to provide error correction features. Network layer provides flow control.

5. Frame Relay deploys physical layer carriers such as \_\_\_\_\_

- a) ADMs
- b) UPSR
- c) BLSR
- d) SONET

[View Answer](#)

Answer: d

Explanation: Frame Relays uses carriers such as SONET (for fiber-optic connections) to physically transmit data frames over a Frame Relay network. SONET is cheaper and provides better network reliability than other carriers.

6. Frame relay provides error detection at the \_\_\_\_\_

- a) physical layer
- b) data link layer
- c) network layer
- d) transport layer

[View Answer](#)

Answer: b

Explanation: Frame relay provides error detection using CRC in the data link layer.

The transport layer then provides the error correction features if an error is detected.

7. Virtual circuit identifier in frame relay is called \_\_\_\_\_

- a) data link connection identifier
- b) frame relay identifier
- c) cell relay identifier
- d) circuit connection identifier

[View Answer](#)

Answer: a

Explanation: The Data Link Connection Identifier is 10-bit virtual circuit identifier. It is used to assign frames to the specified Permanent Virtual Circuits or Switched Virtual Circuits.

8. Frame relay has only \_\_\_\_\_

- a) physical layer
- b) data link layer
- c) physical layer and data link layer

d) network layer and data link layer

[View Answer](#)

Answer: c

Explanation: The physical layer is guided by the protocols recognized by the ANSI and provides conversion to frames. The data link layer supports the simplified core functions specified by the OSI model like error detection.

9. In frame relay networks, extended address is used \_\_\_\_\_

- a) to increase the range of data link connection identifiers
- b) for error detection
- c) for encryption
- d) for error recovery

[View Answer](#)

Answer: a

Explanation: Extended address is indicated by the last bit of every address byte in the DLCI. It specifies whether the byte is the last in the addressing field. It is used to increase the range of data link connection identifiers.

10. What is FRAD in frame relay network?

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[View Answer](#)

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Computer Networks Questions & Answers –

World Wide Web

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "World Wide Web".

1. A piece of icon or image on a web page associated with another webpage is called \_\_\_\_\_

- a) url
- b) hyperlink
- c) plugin
- d) extension

[View Answer](#)

Answer: b

Explanation: URLs are locators for resources present on the World Wide Web. A plugin provides extra functionality to the webpage. An extension provides modification allowance for the core functionality of a webpage. Hyperlink is piece of icon or image on a web page associated with another webpage.

2. Dynamic web page \_\_\_\_\_

- a) is same every time whenever it displays
- b) generates on demand by a program or a request from browser
- c) both is same every time whenever it displays and generates on demand by a program or a request from browser
- d) is different always in a predefined order

[View Answer](#)

Answer: b

Explanation: A dynamic web page provides different content every time the user opens it based on some events like new additions or time of the day. Languages such as JavaScript are used to respond to client-side events while languages such as PHP are used to respond to server-side events.

3. What is a web browser?

- a) a program that can display a web page
- b) a program used to view html documents
- c) it enables user to access the resources of internet
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: A web browser is an application program that is used to access the World Wide Web resources, applications and websites. Some examples of web browsers are Google Chrome, Internet Explorer and Safari.

4. Common gateway interface is used to \_\_\_\_\_

- a) generate executable files from web content by web server
- b) generate web pages
- c) stream videos
- d) download media files

[View Answer](#)

Answer: a

Explanation: CGI is an interface through servers can run execute console-based executable files on a web server that generates dynamic web pages. A CGI script executes only when a request is made. The script then generates HTML.

5. URL stands for \_\_\_\_\_

- a) unique reference label
- b) uniform reference label
- c) uniform resource locator
- d) unique resource locator

[View Answer](#)

Answer: c

Explanation: The Uniform Resource Locator is a locator for the resource to be located by HTTP on the World Wide Web. The URL is derived from the Uniform Resource Identifier.

6. A web cookie is a small piece of data that is \_\_\_\_\_

- a) sent from a website and stored in user's web browser while a user is browsing a website
- b) sent from user and stored in the server while a user is browsing a website
- c) sent from root server to all servers
- d) sent from the root server to other root servers

[View Answer](#)

Answer: a

Explanation: A web cookie is a small piece of data sent from a website and stored in user's web browser while a user is browsing the website and is used to remember stateful information about the user's operations on the website. This can help the website provide a better browsing experience to the user.

7. Which one of the following is not used to generate dynamic web pages?

- a) PHP

b) ASP.NET

c) JSP

d) CSS

[View Answer](#)

Answer: d

Explanation: CSS alone cannot be used to generate dynamic web pages as it does not provide many event handling functions. It can be used along with JavaScript to generate dynamic web pages which are visually compelling.

8. An alternative to JavaScript on windows platform is \_\_\_\_\_

a) VBScript

b) ASP.NET

c) JSP

d) PHP

[View Answer](#)

Answer: a

Explanation: VBScript is a general-purpose, lightweight and active scripting language which can be used on Microsoft Visual Basic. It was first released in 1996.

9. What is document object model (DOM)?

a) convention for representing and interacting with objects in html documents

b) application programming interface

c) hierarchy of objects in ASP.NET

d) scripting language

[View Answer](#)

Answer: a

Explanation: DOM is a hierarchical model i.e. a tree used to represent an HTML or XML document. Every node of the tree an object that represents a part of the document.

10. AJAX stands for \_\_\_\_\_

a) asynchronous javascript and xml

b) advanced JSP and xml

c) asynchronous JSP and xml

d) advanced javascript and xml

[View Answer](#)

Answer: a

Explanation: AJAX is a group of technologies that works on the client-side to create asynchronous web applications. It is used to modify only a part of a webpage and not the whole webpage whenever some event occurs.

Computer Networks Questions & Answers –

IPv4

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IPv4".

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling conventions

[View Answer](#)

Answer: a

Explanation: The Internet Protocol is the networking protocol which establishes the internet by relaying datagrams across network boundaries. ICMP is a supporting protocol for IP which handles the Error Reporting functionality.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

[View Answer](#)

Answer: c

Explanation: TOS-type of service identifies the type of packets. It is not related to fragmentation but is used to request specific treatment such as high throughput, high reliability or low latency for the IP packet depending upon the type of service it belongs to.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

[View Answer](#)

Answer: c

Explanation: TTL stands for Time to Live. This field specifies the life of the IP packet based on the number of hops it makes (Number of routers it goes through). TTL field is decremented by one each time the datagram is processed by a router. When the value is 0, the packet is automatically destroyed.

4. If the value in protocol field is 17, the transport layer protocol used is

- 
- a) TCP
  - b) UDP
  - c) ICMP
  - d) IGMP

[View Answer](#)

Answer: b

Explanation: The protocol field enables the demultiplexing feature so that the IP protocol can be used to carry payloads of more than one protocol type. Its most used values are 17 and 6 for UDP and TCP respectively. ICMP and IGMP are network layer protocols.

5. The data field cannot carry which of the following?

- a) TCP segment
- b) UDP segment
- c) ICMP messages
- d) SMTP messages

[View Answer](#)

Answer: c

Explanation: Data field usually has transport layer segments, but it can also carry ICMP messages. SMTP is an application layer protocol. First it must go through the transport layer to be converted into TCP segments and then it can be inserted into IP packets.

6. What should be the flag value to indicate the last fragment?

- a) 0
- b) 1
- c) TTL value
- d) Protocol field value

[View Answer](#)

Answer: a

Explanation: The Flag field in the IP header is used to control and identify the fragments. It contains three bits: reserved, don't fragment and more fragments. If the more fragments bit is 0, it means that the fragment is the last fragment.

7. Which of these is not applicable for IP protocol?

- a) is connectionless
- b) offer reliable service
- c) offer unreliable service
- d) does not offer error reporting

[View Answer](#)

Answer: b

Explanation: IP does not provide reliable delivery service for the data. It's dependent upon the transport layer protocols like TCP to offer reliability.

8. Which of the following demerits does Fragmentation have?

- a) complicates routers
- b) open to DOS attack
- c) overlapping of fragments.
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Fragmentation makes the implementation of the IP protocol complex and can also be exploited by attackers to create a DOS attack such as a teardrop attack.

Fragmentation won't be required if the transport layer protocols perform wise segmentation.

9. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) ttl

d) identifier

[View Answer](#)

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

Computer Networks Questions & Answers –

IPv4 Addressing

[« Prev](#)

[Next »](#)

This set of Computer Networks Interview Questions and Answers for Experienced people focuses on "IPv4 Addressing".

1. Which of these is not applicable for IP protocol?

- a) Connectionless
- b) Offer reliable service
- c) Offer unreliable service
- d) Does not offer error reporting

[View Answer](#)

Answer: b

Explanation: IP does not provide reliable delivery service for the data. It's dependent upon the transport layer protocols like TCP to offer reliability.

2. Which of the following demerits does Fragmentation have?

- a) Complicates routers
- b) Open to DOS attack
- c) Overlapping of fragments
- d) All of the mentioned

[View Answer](#)

Answer: d

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Fragmentation won't be required if the transport layer protocols perform wise segmentation.

3. Which field helps to check rearrangement of the fragments?

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- b) Flag
- c) TTL
- d) Identifier

[View Answer](#)

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

4. In classless addressing, there are no classes but addresses are still granted in \_\_\_\_\_

- a) IPs
- b) Blocks
- c) Codes
- d) Sizes

[View Answer](#)

Answer: b

Explanation: In classless addressing, there are no classes but addresses are still granted in blocks. The total number of addresses in a block of classless IP addresses =  $2(32 - \text{CIDR\_value})$ .

5. In IPv4 Addresses, classful addressing is replaced with \_\_\_\_\_

- a) Classless Addressing
- b) Classful Addressing
- c) Classful Advertising
- d) Classless Advertising

[View Answer](#)

Answer: a

Explanation: Classful addressing is replaced with classless addressing as a large ratio of the available addresses in a class in calssful addressing is wasted. In classless addressing, one can reserve the number of IP addresses required by modifying the CIDR value and make sure that not many addresses are wasted.

6. First address in a block is used as network address that represents the \_\_\_\_\_

- a) Class Network
- b) Entity

- c) Organization
- d) Codes

[View Answer](#)

Answer: c

Explanation: First address in a block is used as network address that represents the organization. The network address can be found by AND'ing any address in the block by the default mask. The last address in a block represents the broadcast address.

7. In classful addressing, a large part of available addresses are \_\_\_\_\_

- a) Organized
- b) Blocked
- c) Wasted
- d) Communicated

[View Answer](#)

Answer: c

Explanation: In classful addressing, a large part of available addresses are wasted. Thus to solve this classful addressing is replaced with classless addressing where one can reserve the number of IP addresses required by modifying the CIDR value and make sure that not many addresses are wasted.

8. Network addresses are a very important concept of \_\_\_\_\_

- a) Routing
- b) Mask
- c) IP Addressing
- d) Classless Addressing

[View Answer](#)

Answer: c

Explanation: Network addresses are a very important concept of IP addressing. The first address in a block is used as network address that represents the organization. The network address can be found by AND'ing any address in the block or class by the default mask.

9. Which of this is not a class of IP address?

- a) Class E
- b) Class C
- c) Class D
- d) Class F

[View Answer](#)

Answer: d

Explanation: Class F is not a class of IP addressing. There are only five classes of IP addresses: Class A (0.0.0.0 to 127.255.255.255), Class B (128.0.0.0 to 191.255.255.255), Class C (192.0.0.0 to 223.255.255.255), Class D (224.0.0.0 to 239.255.255.255), and Class E (240.0.0.0 to 255.255.255.255).

Computer Networks Questions & Answers –

IPv6

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IPv6".

1. The size of an IP address in IPv6 is \_\_\_\_\_

- a) 4 bytes
- b) 128 bits
- c) 8 bytes
- d) 100 bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long. Therefore,  $2^{128}$  i.e. 340 undecillion addresses are possible in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

2. The header length of an IPv6 datagram is \_\_\_\_\_

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram. There is one fixed header and optional headers which may or may not exist. The fixed header contains the mandatory essential information about the packet while the optional headers contain the optional "not that necessary" information.

3. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast-switching
- c) ToS field
- d) Option field

[View Answer](#)

Answer: c

Explanation: The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the Type of Service field in the IPv4 header. It's an 8-bit field and its values are not defined in the RFC 2460.

4. IPv6 does not use \_\_\_\_\_ type of address.

- a) broadcast
- b) multicast
- c) anycast
- d) unicast

[View Answer](#)

Answer: a

Explanation: There is no concept of broadcast address in IPv6. Instead, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

5. Which among the following features is present in IPv6 but not in IPv4?

- a) Fragmentation
- b) Header checksum
- c) Options
- d) Anycast address

[View Answer](#)

Answer: d

Explanation: There is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

6. The \_\_\_\_\_ field determines the lifetime of IPv6 datagram

- a) Hop limit
- b) TTL

- c) Next header
- d) Type of traffic

[View Answer](#)

Answer: a

Explanation: The Hop limit value is decremented by one by a router when the datagram is forwarded by the router. When the value becomes zero the datagram is discarded. The field is 8-bits wide, so an IPv6 packet can live up to 255 router hops only.

7. Dual-stack approach refers to \_\_\_\_\_

- a) implementing Ipv4 with 2 stacks
- b) implementing Ipv6 with 2 stacks
- c) node has both IPv4 and IPv6 support
- d) implementing a MAC address with 2 stacks

[View Answer](#)

Answer: c

Explanation: Dual-stack is one of the approaches used to support IPv6 in already existing systems. ISPs are using it as a method to transfer from IPv4 to IPv6 completely eventually due to the lower number of possible available addresses in IPv4.

8. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams, but they are connected to each other by intervening IPv4 routers. The best solution here is \_\_\_\_\_

- a) Use dual-stack approach
- b) Tunneling
- c) No solution
- d) Replace the system

[View Answer](#)

Answer: b

Explanation: The IPv4 routers can form a tunnel in which at the sender's side, the IPv6 datagram is encapsulated in to IPv4, and at the receiver's side of the tunnel, the IPv4 packet is stripped and the IPv6 packet is sent to the receiver.

9. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits \_\_\_\_\_

- a) 96 to 127
- b) 0 to 63

- c) 80 to 95
- d) 64 to 79

[View Answer](#)

Answer: a

Explanation: Teredo is a technique through which gives the possibility for full IPv6 network connectivity to IPv6 capable hosts which are currently on an IPv4 network. Bits 96 to 127 in the datagram represents obfuscated IPv4 address of the IPv4 network.

Computer Networks Questions & Answers –

IPv6 Addressing

[« Prev](#)

[Next »](#)

This set of Computer Networks test focuses on "IPv6 Addressing".

1. Dual-stack approach refers to \_\_\_\_\_

- a) Implementing Ipv4 with 2 stacks
- b) Implementing Ipv6 with 2 stacks
- c) Node has both IPv4 and IPv6 support
- d) Implementing a MAC address with 2 stacks

[View Answer](#)

Answer: c

Explanation: Dual-stack is one of the approaches used to support IPv6 in already existing systems. ISPs are using it as a method to transfer from IPv4 to IPv6 completely eventually due to the lower number of possible available addresses in IPv4.

2. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams, but they are connected to each other by intervening IPv4 routers. The best solution here is

- 
- a) Use dual-stack approach
  - b) Tunneling
  - c) No solution
  - d) Replace the system

[View Answer](#)

Answer: b

Explanation: The IPv4 routers can form a tunnel in which at the sender's side, the IPv6 datagram is encapsulated in to IPv4, and at the receiver's side of the tunnel, the IPv4 packet is stripped and the IPv6 packet is sent to the receiver.

3. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits \_\_\_\_\_

- a) 96 to 127
- b) 0 to 63
- c) 80 to 95
- d) 64 to 79

[View Answer](#)

Answer: a

Explanation: Teredo is a technique through which gives the possibility for full IPv6 network connectivity to IPv6 capable hosts which are currently on an IPv4 network. Bits 96 to 127 in the datagram represents obfuscated IPv4 address of the IPv4 network.

4. A link local address of local addresses is used in an \_\_\_\_\_

- a) Isolated router
- b) Isolated mask
- c) Isolated subnet
- d) Isolated net

[View Answer](#)

Answer: c

Explanation: Isolated subnet is very huge sharing network area in this link local address of local addresses is used. A link local address can be configured on any subnet with the prefix "FE80::".

5. In subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called \_\_\_\_\_

- a) Unspecified address
- b) Loopback address
- c) Compatible address
- d) Mapped address

[View Answer](#)

Answer: b

Explanation: In subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called loop back address. IPv6 loopback address is 0000:0000:0000:0000:0000:0000:0001. IPv4 loopback address is 127.0.0.1. It's a reserved address.

6. A few leftmost bits in each address of IPv6 address define its category is called \_\_\_\_\_

- a) Prefix type
- b) Postfix type
- c) Reserved type
- d) Local type

[View Answer](#)

Answer: a

Explanation: Prefix is the bits in the IP address which are placed in leftmost position. A network prefix in IPv6 is given by a CIDR format-like number at the end of the address.

7. In IPv6 addresses, addresses that start with eight 0s are called \_\_\_\_\_

- a) Unicast addresses
- b) Multicast addresses
- c) Any cast addresses
- d) Reserved addresses

[View Answer](#)

Answer: d

Explanation: In IPv6 address format, the starting bits are specified with eight 0s to represent reserved addresses. These reserved addresses have a certain function predefined like the loop-back address is used to test a network card. Reserved addresses

cannot be allotted to a machine.

8. Which statement(s) about IPv6 addresses are true?

- a) Leading zeros are required
- b) Two colons (:) are used to represent successive hexadecimal fields of zeros
- c) Two colons (:) are used to separate fields
- d) A single interface cannot have multiple IPv6 addresses of different types

[View Answer](#)

Answer: b

Explanation: In order to shorten the written length of an IPv6 address, successive

fields of zeros may be replaced by double colons. In trying to shorten the address further, leading zeros may also be removed. Just as with IPv4, a single device's interface can have more than one address; with IPv6 there are more types of addresses and the same rule applies. There can be link-local, global unicast, and multicast addresses all assigned to the same interface.

9. When was IPv6 launched?

- a) June 2, 2012
- b) June 4, 2012
- c) June 5, 2012
- d) June 6, 2012

[View Answer](#)

Answer: d

Explanation: IPv6 is the latest version of the Internet Protocol released on 6 th June 2012. An IPv6 address is 128 bits long. Therefore, 2<sup>128</sup> i.e. 340 undecillion addresses are possible in IPv6.

Computer Networks Questions & Answers –

P2P Applications

[« Prev](#)

[Next »](#)

This set of Computer Networks Problems focuses on "P2P Applications".

1. Which layer is responsible for process-to-process delivery?

- a) Physical layer
- b) Network layer
- c) Transport layer
- d) Application layer

[View Answer](#)

Answer: c

Explanation: The transport layer is responsible for process-to-process delivery, error control and flow control. It provides an interface for the implementation of process to process delivery through ports. There are 65,535 port numbers.

2. In process-to-process delivery, two processes communicate in which of the following methods?

- a) Client/Server
- b) Source/Destination
- c) Message Transfer
- d) Peer to Peer

[View Answer](#)

Answer: a

Explanation: The most common method used for this communication is Client/Server. The client requests a service through a particular port number to the port of the server using its socket address. Then the server responds by giving the requested service to the client port.

3. Multiple processes on destinations at transport layer are identified by \_\_\_\_\_

- a) Mac address
- b) Port number
- c) Host number
- d) Host address

[View Answer](#)

Answer: b

Explanation: Multiple processes on destinations are identified by a transport layer address also called as port number. The IP address along with the port number is called the socket address.

4. Range of port numbers in Internet model is \_\_\_\_\_

- a) 0 and 32,765(8-bit)
- b) 0 and 32,765(16-bit)
- c) 0 and 65,535(32-bit)
- d) 0 and 65,535(16-bit)

[View Answer](#)

Answer: d

Explanation: Port numbers are 16-bit integers between 0 and 65,535. They are an interface for the implementation of process to process delivery for the transport layer.

5. According to Internet Assigned Numbers Authority (IANA), which of the following ranges is not a part of port number ranges?

- a) Well-known ports
- b) Registered ports
- c) Dynamic ports
- d) Static ports

[View Answer](#)

Answer: d

Explanation: IANA divided port numbers into three ranges i.e., Well-known, Registered and Dynamic ports. Well-known port numbers range from 0 to 1023, registered port numbers are from 1024 to 49151 and dynamic port numbers are from 49152 to 65535.

6. The combination of an IP address and port number is called as \_\_\_\_\_

- a) Socket address
- b) Port address
- c) MAC address
- d) Host address

[View Answer](#)

Answer: a

Explanation: Socket address is the combination of an IP address and a port number and it is used to define the client-end and server-end processes uniquely.

7. Which of the following is false with respect to Connectionless service of transport layer protocol?

- a) Packets are not numbered
- b) Packets are not delayed
- c) No acknowledgement
- d) Packet may arrive out of sequence

[View Answer](#)

Answer: b

Explanation: There is a high probability in connectionless services like UDP that the packet gets delayed or lost because there is no connection made between the two end nodes. No connection means that there is no unique pathway for the packets to travel.

8. Correct order in the process of Connection-Oriented services is \_\_\_\_\_

- i. Data transfer
  - ii. Connection release
  - iii. Connection establishment
- a) i-ii-iii
  - b) iii-ii-i
  - c) ii-i-iii
  - d) iii-i-ii

[View Answer](#)

Answer: d

Explanation: First the client has to request a connection and the server has to accept the connection to establish a connection. Then data transfer can start between the two ends. Then both client and server need to terminate their ends to terminate the connection.

9. In transport layer, Multiplexing is done at \_\_\_\_\_

- a) Channel
- b) Receiver site
- c) Sender site
- d) Packet

[View Answer](#)

Answer: c

Explanation: At the sender's side, there are multiple processes which may want to send packets. But there is only one transport layer protocol like TCP or UDP working at a time. So the transport layer protocol gets the messages from these processes and separates them with different port numbers. This process is called multiplexing and it is done before sending packets to the receiver's side.

10. The process of error checking and dropping of the header, delivering messages to appropriate process based on port number is called as \_\_\_\_\_

- a) Delivery of packets
- b) Error correction
- c) Multiplexing
- d) Demultiplexing

[View Answer](#)

Answer: d

Explanation: Demultiplexing is the process of error checking and dropping of the header, delivering messages to appropriate process based on port number. The transport layer does this on the receiver's end after the packet is received and takes help of the header attached by the sender's side transport layer during multiplexing.

Computer Networks Questions & Answers –

[ICMP](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "ICMP".

1. Internet Control Message Protocol (ICMP) has been designed to compensate \_\_\_\_\_

- a) Error-reporting
- b) Error-correction
- c) Host and management queries
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: IP by itself does not provide the features of error reporting or error correction. So, to address these issues a network layer protocol called Internet Control Message Protocol is used. ICMP operates over the IP packet to provide error reporting functionality.

2. Header size of the ICMP message is \_\_\_\_\_

- a) 8-bytes
- b) 8-bits
- c) 16-bytes
- d) 16-bits

[View Answer](#)

Answer: a

Explanation: An ICMP message has an 8-byte header and a variable size data section. Out of the 8 bytes, the first 4 bytes are of a fixed format having the type, code and checksum fields and the next 4 bytes depend upon the type of the message.

3. During error reporting, ICMP always reports error messages to \_\_\_\_\_

- a) Destination
- b) Source
- c) Next router
- d) Previous router

[View Answer](#)

Answer: b

Explanation: ICMP notifies the source about the error when an error is detected because the datagram knows information about source and destination IP address. The source can then retransmit the data again or try to correct those errors.

4. Which of these is not a type of error-reporting message?

- a) Destination unreachable
- b) Source quench
- c) Router error
- d) Time exceeded

[View Answer](#)

Answer: c

Explanation: Router error is not a type of error-reporting message in ICMP. The type of error reporting message is specified in the ICMP header. Destination unreachable is type 3 error message, source quench is type 4, and time exceeded is type 11 error message.

5. ICMP error message will not be generated for a datagram having a special address such as \_\_\_\_\_

- a) 127.0.0.0
- b) 12.1.2
- c) 11.1
- d) 127

[View Answer](#)

Answer: a

Explanation: 127.0.0.0 is a special address known as the loopback address which is used for testing purpose of a machine without actually communicating with a network. Thus no error reporting message will be generated for such special addresses.

6. When a router cannot route a datagram or host cannot deliver a datagram, the datagram is discarded and the router or the host sends a \_\_\_\_\_ message back to the source host that initiated the datagram.

- a) Destination unreachable
- b) Source quench
- c) Router error
- d) Time exceeded

[View Answer](#)

Answer: a

Explanation: Router sends destination unreachable message if the destination is not found. Destination unreachable is type 3 error reporting message. It is invoked when the router can't find a path to the intended destination to forward the packet through.

7. The source-quench message in ICMP was designed to add a kind of \_\_\_\_\_ to the IP.

- a) error control
- b) flow control
- c) router control
- d) switch control

[View Answer](#)

Answer: b

Explanation: Firstly, it informs the source that the datagram has been discarded. Secondly, it warns the source that there is congestion in the network. It's type 4 error reporting message after which the source is expected to reduce the flow of packets.

8. In case of time exceeded error, when the datagram visits a router, the value of time to live field is \_\_\_\_\_

- a) Remains constant
- b) Decrement by 2
- c) Incremented by 1
- d) Decrement by 1

[View Answer](#)

Answer: d

Explanation: This field will be decremented by 1 at every router, and will be zero by the time it reaches source. This error reporting message is type 11 and is used to prevent the router from travelling forever in case some unknown path anomaly occurs.

9. Two machines can use the timestamp request and timestamp replay messages to determine the \_\_\_\_\_ needed for an IP datagram to travel between them.

- a) Half-trip time
- b) Round-trip time
- c) Travel time for the next router
- d) Time to reach the destination/source

[View Answer](#)

Answer: b

Explanation: The round-trip time refers to the total time taken combining the time taken for a packet sent from a source to reach a destination and the time taken the acknowledgement sent by the destination to reach the source. The Router sends destination unreachable message if the destination is not found.

10. During debugging, we can use the \_\_\_\_\_ program to find if a host is alive and responding.

- a) traceroute
- b) shell
- c) ping
- d) java

[View Answer](#)

Answer: c

Explanation: Ping program is used to find if a host is alive and responding. It is to be entered into a command line with the syntax “ping (IP address)” to be executed.

Traceroute is a program used to find the shortest route to the destination IP.

11. In windows \_\_\_\_\_ can be used to trace the route of the packet from the source to the destination.

- a) traceroute
- b) tracert
- c) ping
- d) locator

[View Answer](#)

Answer: b

Explanation: Tracert is used in case of windows, whereas Traceroute in UNIX.

Tracert is a program used to find the shortest route to the destination IP. The Router sends destination unreachable message if a path to the destination IP is not found.

12. In a simple echo-request message, the value of the sum is 01010000 01011100.

Then, value of checksum is \_\_\_\_\_

- a) 10101111 10100011
- b) 01010000 01011100
- c) 10101111 01011100
- d) 01010000 10100011

[View Answer](#)

Answer: a

Explanation: The sender side adds the bits of the fragmented packet to find a sum. Checksum is the compliment of the sum (exchange 0's and 1's). The receiver then has to verify the checksum by adding the bits of the received packet to ensure that the packet is error-free.

## Computer Networks Questions & Answers –

### Transition from IPV4 to IPV6

[« Prev](#)

[Next »](#)

This set of Computer Networks Quiz focuses on "Transition from IPV4 to IPV6".

1. The main reason for transition from IPv4 to IPv6 is \_\_\_\_\_

- a) Huge number of systems on the internet
- b) Very low number of system on the internet
- c) Providing standard address
- d) To provide faster internet

[View Answer](#)

Answer: a

Explanation: Due to huge number of systems on the internet and the lower number of available addresses on IPv4, transition from IPv4 to IPv6 needs to happen. IPv4 provides around 4 billion unique IP addresses whereas IPv6 provides over 340 undecillion unique IP addresses.

2. Which of the following is not a transition strategy?

- a) Dual stack
- b) Tunneling
- c) Conversion
- d) Header translation

[View Answer](#)

Answer: c

Explanation: As IPv4 addresses are of 32 bits and IPv6 addresses are of 128 bits, it is not possible to convert IPv4 address to IPv6 address. So, Dual stack, tunneling and header translation are the three strategies which might help in the transition from IPv4 to IPv6.

3. To determine which version to use when sending a packet to a destination, the source host queries which of the following?

- a) Dual stack
- b) Domain Name Server
- c) Header information

d) Transport layer

[View Answer](#)

Answer: b

Explanation: Source host queries DNS to determine which version to use when sending a packet to a destination. The DNS contains both, the IPv4 and IPv6 addresses of the modern dual stack host servers.

4. The strategy used when two computers using IPv6 want to communicate with each other and the packet must pass through a region that uses IPv4 is \_\_\_\_\_

a) Dual stack

b) Header translation

c) Conversion

d) Tunneling

[View Answer](#)

Answer: d

Explanation: In tunneling, The IPv4 routers can form a tunnel in which at the sender's side, the IPv6 datagram is encapsulated in to IPv4, and at the receiver's side of the tunnel, the IPv4 packet is stripped and the IPv6 packet is sent to the receiver.

5. The correct format of packet in tunnel that uses IPv4 region is \_\_\_\_\_

i. IPv6 header

ii. Payload

iii. IPv4 header

a) iii-i-ii

b) iii-ii-i

c) i-ii-iii

d) i-iii-ii

[View Answer](#)

Answer: a

Explanation: At the sender's side, the IPv6 datagram is encapsulated in to IPv4 i.e. An IPv4 header is inserted on top of the IPv6 header, and then the packet is sent through the tunnel.

6. \_\_\_\_\_ is necessary when the sender wants to use IPv6, but the receiver does not understand IPv6.

a) Dual stack

b) Header translation

- c) Conversion
- d) Tunneling

[View Answer](#)

Answer: b

Explanation: Header translation is used when the sender wants to use IPv6, but the receiver does not understand IPv6. It is made possible through a Network Address Translation – Protocol Translation enabled device such as a gateway.

7. Header translation uses \_\_\_\_\_ to translate an IPv6 address to an IPv4 address.

- a) IP address
- b) Physical address
- c) Mapped address
- d) MAC address

[View Answer](#)

Answer: c

Explanation: A mapped IPv6 address contains the IPv4 address in its last 32-bits and is preceded by 16 1s and 80 0s. It can be used to translate an IPv6 address to an IPv4 address.

8. Which of the following is not a step in the Header translation procedure?

- a) The IPv6 mapped address is changed to an IPv4 address by extracting the rightmost 32bits
- b) The value of the IPv6 priority field is discarded
- c) The type of service field in IPv4 is set to zero
- d) The IPv6 flow label is considered

[View Answer](#)

Answer: d

Explanation: In the header translation procedure, first the IPv6 mapped address is changed to an IPv4 address by extracting the rightmost 32bits, then the value of the IPv6 priority field is discarded, and finally the ToS field in the IPv4 header is set to zero. IPv6 flow label is ignored in the procedure.

Computer Networks Questions & Answers –

IPV4 and IPV6 Comparision

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IPV4 and IPV6 Comparision".

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling

[View Answer](#)

Answer: a

Explanation: The Internet Protocol is the networking protocol that establishes the internet by relaying datagram across network boundaries. ICMP is a supporting protocol for IP which handles the Error Reporting functionality.

2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

[View Answer](#)

Answer: c

Explanation: TOS-type of service identifies the type of packets. It is not related to fragmentation but is used to request specific treatment such as high throughput, high reliability or low latency for the IP packet depending upon the type of service it belongs to.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

[View Answer](#)

Answer: c

Explanation: TTL stands for Time to Live. This field specifies the life of the IP packet based on the number of hops it makes (Number of routers it goes through). TTL field

is decremented by one each time the datagram is processed by a router. When the value is 0, the packet is automatically destroyed.

4. If the value in protocol field is 17, the transport layer protocol used is \_\_\_\_\_

- a) TCP
- b) UDP
- c) ICMP
- d) IGMP

[View Answer](#)

Answer: b

Explanation: The protocol field enables the demultiplexing feature so that the IP protocol can be used to carry payloads of more than one protocol type. Its most used values are 17 and 6 for UDP and TCP respectively. ICMP and IGMP are network layer protocols.

5. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) ttl
- d) identifier

[View Answer](#)

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

6. The size of an IP address in IPv6 is \_\_\_\_\_

- a) 4bytes
- b) 128bits
- c) 8bytes
- d) 100bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long. Therefore,  $2^{128}$  i.e. 340 undecillion unique addresses are available in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

7. The header length of an IPv6 datagram is \_\_\_\_\_

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram. There is one fixed header and optional headers which may or may not exist. The fixed header contains the mandatory essential information about the packet while the optional headers contain the optional "not that necessary" information.

8. In an IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast switching
- c) TOS field
- d) Option field

[View Answer](#)

Answer: c

Explanation: The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the Type of Service field in the IPv4 header. It's an 8-bit field and its values are not defined in the RFC 2460.

9. IPv6 does not use \_\_\_\_\_ type of address.

- a) Broadcast
- b) Multicast
- c) Any cast
- d) Unicast

[View Answer](#)

Answer: a

Explanation: There is no concept of broadcast address in IPv6. Instead, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

10. Which are the features present in IPv4 but not in IPv6?

- a) Fragmentation
- b) Header checksum

- c) Options
- d) Anycast address

[View Answer](#)

Answer: d

Explanation: There is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

Computer Networks Questions & Answers –

Analyzing Subnet Masks

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Analyzing Subnet Masks".

1. Which of the following is the broadcast address for a Class B network ID using the default subnetmask?

- a) 172.16.10.255
- b) 255.255.255.255
- c) 172.16.255.255
- d) 172.255.255.255

[View Answer](#)

Answer: c

Explanation: In this case, the class B network ID is 172.16.0.0. We know that the default mask of a class B network is 255.255.0.0. If we OR any address in a network with the complement of the default mask (0.0.255.255), we get the broadcast address of the network. In this case, the result of OR would be 172.16.255.255.

2. You have an IP address of 172.16.13.5 with a 255.255.255.128 subnet mask. What is your class of address, subnet address, and broadcast address?

- a) Class A, Subnet 172.16.13.0, Broadcast address 172.16.13.127
- b) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.127
- c) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.255
- d) Class B, Subnet 172.16.0.0, Broadcast address 172.16.255.255

[View Answer](#)

Answer: b

Explanation: We know that the prefix 172 lies in class B (128 to 191) of IPv4 addresses. From the subnet mask, we get that the class is divided into 2 subnets: 172.16.13.0 to 172.16.13.127 and 172.16.13.128 to 172.16.13.255. The IP 172.16.13.5 lies in the first subnet. So the starting address 172.16.13.0 is the subnet address and last address 172.16.13.127 is the broadcast address.

3. If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?

- a) 255.255.255.252
- b) 255.255.255.255
- c) 255.255.255.240
- d) 255.255.255.248

[View Answer](#)

Answer: c

Explanation: If you have eight networks and each requires 10 hosts, you would use the Class C mask of 255.255.255.240. Why? Because 240 in binary is 11110000, which means you have four subnet bits and four host bits. Using our math, we'd get the following:

$24-2=14$  subnets

$24-2=14$  hosts.

4. The combination of \_\_\_\_\_ and \_\_\_\_\_ is often termed the local address of the local portion of the IP address.

- a) Network number and host number
- b) Network number and subnet number
- c) Subnet number and host number
- d) Host number

[View Answer](#)

Answer: c

Explanation: It is termed as the local address because the address won't be applicable outside the subnet. Sub networking is implemented for remote sensing in transparent way from that host which is contained in the sub network which called a local operation.

5. \_\_\_\_\_ implies that all subnets obtained from the same subnet mask.

- a) Static subnetting
- b) Dynamic subnetting
- c) Variable length subnetting

d) Dynamic length subnetting

[View Answer](#)

Answer: a

Explanation: Static subnetting is used when the requirement is of same number of hosts in each subnet for the institution. The same subnet mask can be used to find the subnet id of each subnet. It is usually used to divide large networks into smaller parts.

6. State whether true or false.

i) A connection oriented protocol can only use unicast addresses.

ii) The any cast service is included in IPV6.

a) True, True

b) True, False

c) False, True

d) False, False

[View Answer](#)

Answer: a

Explanation: In a connection oriented protocol, the host can only establish connection with another host on one unique channel, that's why it can only use unicast addresses. In IPv6, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network.

7. \_\_\_\_\_ is a high performance fiber optic token ring LAN running at 100 Mbps over distances upto 1000 stations connected.

a) FDDI

b) FDDT

c) FDDR

d) FOTR

[View Answer](#)

Answer: a

Explanation: FDDI stands for Fiber Distributed Data Interface. It is a set of standards for fiber optic token ring LANs running at 100 Mbps over distances up to 200 km in diameter and 1000 stations connected.

8. Which of the following are Gigabit Ethernets?

a) 1000 BASE-SX

b) 1000 BASE-LX

c) 1000 BASE-CX

d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: In computer networking, Gigabit Ethernet (GbE or 1 GigE) is a term describing various technologies for transmitting Ethernet frames at a rate of a gigabit per second (1,000,000,000 bits per second), as defined by the IEEE 802.3-2008 standard. It came into use beginning in 1999, gradually supplanting Fast Ethernet in wired local networks, as a result of being considerably faster.

9. \_\_\_\_\_ is a collective term for a number of Ethernet Standards that carry traffic at the nominal rate of 1000 Mbit/s against the original Ethernet speed of 10 Mbit/s.

- a) Ethernet
- b) Fast Ethernet
- c) Gigabit Ethernet
- d) Gigabyte Ethernet

[View Answer](#)

Answer: b

Explanation: Fast Ethernet is a set of Ethernet Standards which were introduced in 1995, that carry traffic at the nominal rate of 1000 Mbit/s. 100BASE-TX is the most commonly used Fast Ethernet standard.

10. \_\_\_\_\_ is another kind of fiber optic network with an active star for switching.

- a) S/NET
- b) SW/NET
- c) NET/SW
- d) FS/NET

[View Answer](#)

Answer: a

Explanation: A 50-MBd active star fiber optical Local area network (LAN) and its optical combiner and mixing rod splitter are presented. The limited power budget and relatively large tapping losses of light wave technology, which limit the use of fiber optics in tapped bus LAN topologies, are examined and proven tolerable in optical star topologies.

Computer Networks Questions & Answers –

Designing Subnet Masks

[« Prev](#)

[Next »](#)

This set of Computer Networks MCQs focuses on “Designing Subnet Masks”.

1. A network administrator is connecting hosts A and B directly through their Ethernet interfaces, as shown in the illustration. Ping attempts between the hosts are unsuccessful. What can be done to provide connectivity between the hosts?

- i. A crossover cable should be used in place of the straight-through cable.
- ii. A rollover cable should be used in place of the straight-through cable.
- iii. The subnet masks should be set to 255.255.255.192.
- iv. A default gateway needs to be set on each host.
- v. The subnet masks should be set to 255.255.255.0.

- a) i only
- b) ii only
- c) iii and iv only
- d) i and v only

[View Answer](#)

Answer: d

Explanation: First, if you have two hosts directly connected, as shown in the graphic, then you need a crossover cable. A straight-through cable won't work. Second, the hosts have different masks, which puts them in different subnets. The easy solution is just to set both masks to 255.255.255.0 (/24).

2. Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?

- i. 172.16.1.100
- ii. 172.16.1.198
- iii. 172.16.2.255
- iv. 172.16.3.0

- a) i only
- b) ii and iii only

- c) iii and iv only
- d) ii only

[View Answer](#)

Answer: c

Explanation: The router's IP address on the E0 interface is 172.16.2.1/23, which is 255.255.254.0. This makes the third octet a block size of 2. The router's interface is in the 172.16.2.0 subnet, and the broadcast address is 172.16.3.255 because the next subnet is 172.16.4.0. The valid host range is 172.16.2.1 to 172.16.3.254. The router is using the first valid host address in the range.

3. Which two statements describe the IP address 10.16.3.65/23?

- i. The subnet address is 10.16.3.0 255.255.254.0.
- ii. The lowest host address in the subnet is 10.16.2.1 255.255.254.0.
- iii. The last valid host address in the subnet is 10.16.2.254 255.255.254.0.
- iv. The broadcast address of the subnet is 10.16.3.255 255.255.254.0.

- a) i and iii
- b) ii and iv
- c) i, ii and iv
- d) ii, iii and iv

[View Answer](#)

Answer: b

Explanation: The mask 255.255.254.0 (/23) used with a Class A address means that there are 15 subnet bits and 9 host bits. The block size in the third octet is 2 (256 – 254). So this makes the subnets in the interesting octet 0, 2, 4, 6, etc., all the way to 254. The host 10.16.3.65 is in the 10.16.2.0 subnet. The next subnet is 10.16.4.0, so the broadcast address for the 10.16.2.0 subnet is 10.16.3.255. The valid host addresses are 10.16.2.1 to 10.16.3.254.

4. What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?

- a) 14
- b) 15
- c) 16
- d) 30

[View Answer](#)

Answer: d

Explanation: A /27 (255.255.255.224) is 3 bits on and 5 bits off. This provides 8

subnets, each with 30 hosts. Does it matter if this mask is used with a Class A, B, or C network address? Not at all. The number of host bits would never change.

5. You need to subnet a network into 5 subnets, each with at least 16 hosts. Which classful subnet mask would you use?

- a) 255.255.255.192
- b) 255.255.255.224
- c) 255.255.255.240
- d) 255.255.255.248

[View Answer](#)

Answer: b

Explanation: You need 5 subnets, each with at least 16 hosts. The mask 255.255.255.240 provides 16 subnets with 14 hosts which is less than 15, so this will not work. The mask 255.255.255.224 provides 8 subnets, each with 30 hosts so this may work. The mask 255.255.255.192 provides 4 subnets, each with 60 hosts so this may work. Comparing both the possible masks, 255.255.255.224 provides the best answer.

6. You have a network that needs 29 subnets while maximizing the number of host addresses available on each subnet. How many bits must you borrow from the host field to provide the correct subnet mask?

- a) 2
- b) 3
- c) 4
- d) 5

[View Answer](#)

Answer: d

Explanation: A 240 mask is 4 subnet bits and provides 16 subnets, each with 14 hosts. We need more subnets, so let's add subnet bits. One more subnet bit would be a 248 mask. This provides 5 subnet bits (32 subnets) with 3 host bits (6 hosts per subnet). This is the best answer.

7. If an Ethernet port on a router were assigned an IP address of 172.16.112.1/25, what would be the valid subnet address of this host?

- a) 172.16.112.0
- b) 172.16.0.0
- c) 172.16.96.0
- d) 172.16.255.0

[View Answer](#)

Answer: a

Explanation: A /25 mask is 255.255.255.128. Used with a Class B network, the third and fourth octets are used for subnetting with a total of 9 subnet bits, 8 bits in the third octet and 1 bit in the fourth octet. Since there is only 1 bit in the fourth octet, the bit is either off or on-which is a value of 0 or 128. The host in the question is in the 0 subnet, which has a broadcast address of 127 since 128 is the next subnet

8. You have an interface on a router with the IP address of 192.168.192.10/29.

Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?

- a) 6
- b) 8
- c) 30
- d) 32

[View Answer](#)

Answer: a

Explanation: A /29 (255.255.255.248), regardless of the class of address, has only 3 host bits. Six hosts are the maximum number of hosts on this LAN, including the router interface. Out of the 8 addresses possible with the host bits, the first and the last address are for the subnet id and broadcast address respectively.

9. What is the subnet id of a host with an IP address 172.16.66.0/21?

- a) 172.16.36.0
- b) 172.16.48.0
- c) 172.16.64.0
- d) 172.16.0.0

[View Answer](#)

Answer: c

Explanation: A /21 is 255.255.248.0, which means we have a block size of 8 in the third octet, so we just count by 8 until we reach 66. The subnet in this question is 64.0. The next subnet is 72.0, so the broadcast address of the 64 subnet is 71.255.

10. The network address of 172.16.0.0/19 provides how many subnets and hosts?

- a) 7 subnets, 30 hosts each
- b) 8 subnets, 8,190 hosts each
- c) 8 subnets, 2,046 hosts each
- d) 7 subnets, 2,046 hosts each

[View Answer](#)

Answer: b

Explanation: A CIDR address of /19 is 255.255.224.0. This is a Class B address, so that is only 3 subnet bits, but it provides 13 host bits, or 8 subnets, each with 8,190 hosts.

Computer Networks Questions & Answers –

IP Routing

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IP Routing".

1. Which type of Ethernet framing is used for TCP/IP and DEC net?

- a) Ethernet 802.3
- b) Ethernet 802.2
- c) Ethernet II
- d) Ethernet SNAP

[View Answer](#)

Answer: c

Explanation: The Ethernet 802.3 framing is used for NetWare versions 2 to 3.11, and the Ethernet 802.2 framing is used for NetWare versions 3.12 and later plus OSI routing, Ethernet II is used with TCP/IP and DEC net, and Ethernet SNAP is used with TCP/IP and AppleTalk. The type field in Ethernet 802.2 frame is replaced by a length field in Ethernet 802.3.

2. Consider a situation in which you are a system administrator on a NetWare network, you are running NetWare 4.11 and you cannot communicate with your router. What is the likely problem?

- a) NetWare 4.11 defaults to 802.2 encapsulation
- b) NetWare 4.11 defaults to 802.3 encapsulation
- c) Cisco routers only work with NetWare 3.11
- d) NetWare 3.11 defaults to 802.2 encapsulation

[View Answer](#)

Answer: a

Explanation: The default encapsulation on Cisco routers is Novell Ethernet\_802.3 and

NetWare 3.12 and later defaults to 802.2 encapsulation, 3.11 and earlier defaults to 802.3.

3. NetWare IPX addressing uses a network number and a node number. Which statement is not true?

- a) The network address is administratively assigned and can be up to 16 hexadecimal digits long
- b) The node address is always administratively assigned
- c) The node address is usually the MAC address
- d) If the MAC address is used as the node address, then IPX eliminates the use of ARP

[View Answer](#)

Answer: b

Explanation: The network address can be up to 16 hexadecimal digits in length. The node number is 12 hexadecimal digits. The node address is usually the MAC address. An example IPX address is 4a1d.0000.0c56.de33. The network part is 4a1d. The node part is 0000.0c56.de33. The network number is assigned by the system administrator of the Novell network and the MAC address/node address is not assigned by the administrator.

4. Which NetWare protocol works on layer 3—network layer—of the OSI model?

- a) IPX
- b) NCP
- c) SPX
- d) NetBIOS

[View Answer](#)

Answer: a

Explanation: IPX (Internetwork Packet Exchange) is the NetWare network layer 3 protocol used for transferring information on LANs that use Novell's NetWare.

5. Which NetWare protocol provides link-state routing?

- a) NLSP
- b) RIP
- c) SAP
- d) NCP

[View Answer](#)

Answer: a

Explanation: NetWare Link Services Protocol (NLSP) provides link-state routing. SAP (Service Protocol) advertises network services. NCP (NetWare

Core Protocol) provides client-to-server connections and applications. RIP is a distance vector routing protocol. NLSP was developed by Novell to replace RIP routing protocols.

6. As a system administrator, you want to debug IGRP but are worried that the "debug IP IGRP transaction" command will flood the console. What is the command that you should use?

- a) Debug IP IGRP event
- b) Debug IP IGRP-events
- c) Debug IP IGRP summary
- d) Debug IP IGRP events

[View Answer](#)

Answer: d

Explanation: The "debug IP IGRP events" is used to display a short summary of IGRP routing information. You can append an IP address onto either console's commandline to see only the IGRP updates from a neighbor. The command will only give a short summary and hence won't flood the command line.

7. What does the following series of commands "Router IGRP 71 network" accomplish?

- 10.0.0.0 router IGRP 109 network 172.68.7.0
- a) It isolates networks 10.0.0.0 and 172.68.7.0
  - b) It loads IGRP for networks 109 and 71
  - c) It disables RIP
  - d) It disables all routing protocols

[View Answer](#)

Answer: a

Explanation: It isolates network 10.0.0.0 and 172.68.7.0 and associates autonomous systems 109 and 71 with IGRP. IGRP does not disable RIP, both can be used at the same time.

8. The "IPX delay number" command will allow an administrator to change the default settings. What are the default settings?

- a) For LAN interfaces, one tick; for WAN interfaces, six ticks
- b) For LAN interfaces, six ticks; for WAN interfaces, one tick
- c) For LAN interfaces, zero ticks; for WAN interfaces, five ticks
- d) For LAN interfaces, five ticks; for WAN interfaces, zero Ticks

[View Answer](#)

Answer: a

Explanation: Tick is basically the update rate of clients in the network. The IPX delay number will give the ticks at a certain time. The default ticks are—for LAN interfaces, one tick, and for WAN interfaces, six ticks.

9. As a system administrator, you need to set up one Ethernet interface on the Cisco router to allow for both sap and Novell-ether encapsulations. Which set of commands will accomplish this?

- a) Interface Ethernet 0.1 IPX encapsulation Novell-ether IPX network 9e interface  
Ethernet 0.2 IPX network 6c
- b) Interface Ethernet 0 IPX encapsulation Novell-ether IPX network 9e interface  
Ethernet 0 IPX encapsulation sap IPX network 6c
- c) Interface Ethernet 0.1 IPX encapsulation Novell-ether interface Ethernet 0.2 IPX encapsulation sap
- d) Interface Ethernet 0.1ipx encapsulation Novell-ether IPX network 9e interface  
Ethernet 0.2 IPX encapsulation sap IPX network 6c

[View Answer](#)

Answer: d

Explanation: The following commands setup the sub interfaces to allow for two types of encapsulation:  
interface Ethernet 0.1 IPX encapsulation Novell-ether IPX network 9e  
interface Ethernet 0.2 IPX encapsulation sap IPX network 6c.

10. What does the “IPX maximum-paths 2” command accomplish?

- a) It enables load sharing on 2 paths if the paths are equal metric paths
- b) It sets up routing to go to network 2
- c) It is the default for Cisco IPX load sharing
- d) It enables load sharing on 2 paths if the paths are unequal metric paths

[View Answer](#)

Answer: a

Explanation: It enables load sharing on 2 paths if the paths are equal metric paths. The default is 1 path and the maximum is 512 paths. The value must always be greater than 1 and must be a natural number.

11. You want to enable both arpa and snap encapsulation on one router interface. How do you do this?

- a) The interface can handle multiple encapsulation types with no extra configuration
- b) Assign two network numbers, one for each encapsulation type
- c) Enable Novell-ether to run multiple encapsulation types

d) Both arpa and snap are enabled by default so you don't have to configure anything

[View Answer](#)

Answer: b

Explanation: To assign multiple network numbers, you usually use sub interfaces. A sample configuration follows: IPXEthernet 0.1 IPX encapsulation novell-ether ipx network 9e interface ethernet 0.2 ipx encapsulation sap ipx network 6c

12. By default, Cisco routers forward GNS SAPs to remote networks.

a) False

b) True

[View Answer](#)

Answer: a

Explanation: GNS is Novell's protocol to Get Nearest Server. If there is a server on the local network, that server will respond. If there isn't, the Cisco router has to be configured to forward the GNS SAP.

13. To prevent Services (SAPs) from flooding a network, Cisco routers do not forward them. How are services advertised to other networks?

a) Each router builds its own SAP table and forwards that every 60 seconds

b) Each router assigns a service number and broadcasts that

c) SAPs aren't necessary with Cisco routers

d) Cisco routers filter out all SAPs

[View Answer](#)

Answer: a

Explanation: Cisco routers build SAP tables and forward the table every 60 seconds.

All SAPs can't be filtered even with 4.x since NDS and time synchronization uses SAPs.

14. Novell's implementation of RIP updates routing tables every \_\_\_\_\_ seconds.

a) 60

b) 90

c) 10

d) 30

[View Answer](#)

Answer: a

Explanation: Novell's RIP updates routing tables every 60 seconds, Apple's RTMP is

every 10 seconds, routers ARP every 60 seconds, IGRP signal every 90 seconds, and Banyan VINES signals every 90 seconds.

15. In Novell's use of RIP, there are two metrics used to make routing decisions. Select the correct metrics.

- a) Ticks & Hops
- b) Hops & Loops
- c) Loops & Counts
- d) Counts & Ticks

[View Answer](#)

Answer: a

Explanation: It first uses ticks (which is about 1/18 sec.); if there is a tie, it uses hops; if hops are equal, then it uses an administratively assigned tiebreaker.

Computer Networks Questions & Answers –

RIP v1

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "RIP v1".

1. Which protocol should you select if the network diameter is more than 17 hops?

- a) RIPv1
- b) RIPv2
- c) EIGRP
- d) Both RIPv1 and RIPv2

[View Answer](#)

Answer: a

Explanation: RIP v1 has network diameter is more than 17 hops. It uses classful routing and the routing updates are broadcasted over the network. It notifies routers about the update so that they update their own routing tables.

2. How often does a RIPv1 router broadcast its routing table by default?

- a) Every 30 seconds
- b) Every 60 seconds
- c) Every 90 seconds

- d) RIPv1 does not broadcast periodically

[View Answer](#)

Answer: a

Explanation: RIPv1 router broadcasts its routing table every 30 seconds by default. The broadcasted routing table can be used by other routers to find the shortest path among the network devices.

3. Which command displays RIP routing updates?

- a) Show IP route
- b) Debug IP rip
- c) Show protocols
- d) Debug IP route

[View Answer](#)

Answer: b

Explanation: The debug IP rip command is used to show the Internet Protocol (IP) Routing Information Protocol (RIP) updates being sent and received on the router. It verifies that the updates are being broadcasted and not multicasted.

4. Two connected routers are configured with RIP routing. What will be the result when a router receives a routing update that contains a higher-cost path to a network already in its routing table?

- a) The updated information will be added to the existing routing table Debug IP rip
- b) The update will be ignored and no further action will occur Debug IP route
- c) The updated information will replace the existing routing table entry
- d) The existing routing table entry will be deleted from the routing table and all routers will exchange routing updates to reach convergence

[View Answer](#)

Answer: b

Explanation: When a routing update is received by a router, the router first checks the administrative distance (AD) and always chooses the route with the lowest AD.

However, if two routes are received and they both have the same AD, then the router will choose the one route with the lowest metrics, or in RIP's case, hop count.

5. You type debug IP rip on your router console and see that 172.16.10.0 is being advertised to you with a metric of 16. What does this mean?

- a) The route is 16 hops away Debug IP rip
- b) The route has a delay of 16 microseconds Debug IP route
- c) The route is inaccessible

d) The route is queued at 16 messages a second

[View Answer](#)

Answer: c

Explanation: You cannot have 16 hops on a RIP network by default, because the max default hops possible is 15. If you receive a route advertised with a metric of 16, this means it is inaccessible.

6. Default administrative distance of a static route is \_\_\_\_\_

- a) 0
- b) 90
- c) 100
- d) 1

[View Answer](#)

Answer: d

Explanation: 1 is the default administrative distance of Static Route. It is used by routers to select the best path when there are different routes to the same destination. It's used only two different routing protocols are being used.

7. Which protocol gives a full route table update every 30 seconds?

- a) IEGRP
- b) RIP
- c) ICMP
- d) IP

[View Answer](#)

Answer: b

Explanation: RIP gives a full route table update every 30 seconds. The broadcasted routing table can be used by other routers to find the shortest path among the network devices.

8. \_\_\_\_\_ is the default administrative distance of RIP.

- a) 0
- b) 90
- c) 120
- d) 130

[View Answer](#)

Answer: c

Explanation: The default administrative distance is the default count of numbers assigned to arbitrary routes to a destination. The default administrative distance of RIP is 120. It is used to find the shortest route amongst the number of paths available.

9. Which statement is true regarding classless routing protocol?

- a) The use of discontinuous networks is not allowed
- b) Use of variable length subnet masks is permitted
- c) RIPv1 is a classless routing protocol
- d) IGRP supports classes routing within the same autonomous system

[View Answer](#)

Answer: b

Explanation: Use of variable length subnet masks is permitted in classless routing protocols. Also use of discontinuous networks is allowed in such routing protocols. RIPv1 is a classful routing protocol but RIPv2 is classless routing protocol.

10. Where should we use default routing?

- a) On stub networks- which have only one exit path out of the network
- b) Which have more than one exit path out of the network
- c) Minimum five exit paths out of the network
- d) Maximum five exit paths out of the network

[View Answer](#)

Answer: a

Explanation: We must use default routing on stub networks. They have only one exit path out of the network, so there can be no specific path decided for such networks.

Computer Networks Questions & Answers –

RIP v2

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers focuses on "RIP v2".

1. Which statement is true regarding classless routing protocols?

- a) The use of discontinuous networks is not allowed
- b) The use of variable length subnet masks is permitted

- c) RIPv1 is a classless routing protocol
- d) RIPv2 supports classless routing

[View Answer](#)

Answer: b

Explanation: Classful routing means that all hosts in the internetwork use the same mask. Classless routing means that you can use Variable Length Subnet Masks (VLSMs) and can also support discontinuous networking.

2. What is route poisoning?

- a) It sends back the protocol received from a router as a poison pill, which stops the regular updates. The use of variable length subnet masks is permitted
- b) It is information received from a router that can't be sent back to the originating router. RIPv2 supports classless routing
- c) It prevents regular update messages from reinstating a route that has just come up
- d) It describes when a router sets the metric for a downed link to infinity

[View Answer](#)

Answer: d

Explanation: When a network goes down, the distance-vector routing protocol initiates route poisoning by advertising the network with a metric of 16, or unreachable.

3. Which of the following is true regarding RIPv2?

- a) It has a lower administrative distance than RIPv1
- b) It converges faster than RIPv1
- c) It has the same timers as RIPv1
- d) It is harder to configure than RIPv1

[View Answer](#)

Answer: c

Explanation: RIPv2 is pretty much just like RIPv1. It has the same administrative distance and timers and is configured just like RIPv1.

4. Which of the situations might not require multiple routing protocols in a network?

- a) When a new Layer 2-only switch is added to the network
- b) When you are migrating from one routing protocol to another
- c) When you are using routers from multiple vendors
- d) When there are host-based routers from multiple vendors

[View Answer](#)

Answer: a

Explanation: Multiple routing protocols are required only when we need to migrate from one routing protocol to another, or when we are using routers from multiple vendors, or when there are host-based routers from multiple vendors. Routing is not a layer-2 function so we don't require multiple routing protocols when new layer-2 switch is added.

5. Which two routing protocols can be redistributed into OSPF by a Cisco router?

- a) IP EIGRP and AppleTalk EIGRP
- b) AppleTalk EIGRP and RIPv2
- c) RIPv2 and IP EIGRP
- d) IPX RIP & AppleTalk EIGRP

[View Answer](#)

Answer: c

Explanation: OSPF stands for Open Shortest Path First. It is a Link state routing protocol. IP EIGRP and RIPv2 can be redistributed into OSPF by a Cisco router.

6. Which is a reason for avoiding doing route redistribution on two routers between the same two routing domains?

- a) Higher cost of two routers
- b) Routing feedback
- c) Cisco IOS incompatibility
- d) Not possible to use two routers

[View Answer](#)

Answer: b

Explanation: Routing feedback is an anomaly in which the routing protocols go back and forth between one route and another. Routing feedback is a reason for avoiding doing route redistribution on two routers between the same two routing domains.

7. What does administrative distance rank?

- a) Metrics
- b) Sources of routing information
- c) Router reliability
- d) Best paths

[View Answer](#)

Answer: b

Explanation: Sources of routing information is the administrative distance rank. It is

used by routers to select the best path when there are different routes to the same destination. It's used only two different routing protocols are being used.

8. Which protocol maintains neighbor adjacencies?

- a) RIPv2 and EIGRP
- b) IGRP and EIGRP
- c) RIPv2
- d) EIGRP

[View Answer](#)

Answer: c

Explanation: Neighbor adjacency refers to the formal handshake performed by neighboring routers. It is to be done before the router share any routing information. RIP V2 maintains neighbor adjacencies.

9. Which routing protocol implements the diffusing update algorithm?

- a) IS-IS
- b) IGRP
- c) EIGRP
- d) OSPF

[View Answer](#)

Answer: c

Explanation: The diffusing update algorithm (DUAL) is used to maintain backup routes to a destination for when the primary route fails. EIGRP routing protocol implements the diffusing update algorithm.

10. Which protocol should you select if the network diameter is more than 17 hops?

- a) RIPv1
- b) RIPv2
- c) EIGRP
- d) OSPF

[View Answer](#)

Answer: b

Explanation: RIPv2 protocol should you select if the network diameter is more than 17 hops. It uses classless routing and the routing updates are broadcasted over the network. It notifies routers about the update so that they update their own routing tables.

## Computer Networks Questions & Answers –

### Cryptography

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Cryptography".

1. In cryptography, what is cipher?

- a) algorithm for performing encryption and decryption
- b) encrypted message
- c) both algorithm for performing encryption and decryption and encrypted message
- d) decrypted message

[View Answer](#)

Answer: a

Explanation: Cipher is a method to implement encryption and decryption of messages travelling in a network. It's used to increase the confidentiality of the messages.

2. In asymmetric key cryptography, the private key is kept by \_\_\_\_\_

- a) sender
- b) receiver
- c) sender and receiver
- d) all the connected devices to the network

[View Answer](#)

Answer: b

Explanation: The private key is kept only by the receiver of the message. Its aim is to make sure that only the intended receiver can decipher the message.

3. Which one of the following algorithm is not used in asymmetric-key cryptography?

- a) rsa algorithm
- b) diffie-hellman algorithm
- c) electronic code book algorithm
- d) dsa algorithm

[View Answer](#)

Answer: c

Explanation: Electronic code book algorithm is a block cipher method in which each

block of text in an encrypted message corresponds to a block of data. It is not feasible for block sizes smaller than 40 bits.

4. In cryptography, the order of the letters in a message is rearranged by \_\_\_\_\_

- a) transpositional ciphers
- b) substitution ciphers
- c) both transpositional ciphers and substitution ciphers
- d) quadratic ciphers

[View Answer](#)

Answer: a

Explanation: In transposition ciphers, the order of letters in a plaintext message is shuffled using a pre-defined method. Some of such ciphers are Rail fence cipher and Columnar transposition.

5. What is data encryption standard (DES)?

- a) block cipher
- b) stream cipher
- c) bit cipher
- d) byte cipher

[View Answer](#)

Answer: a

Explanation: DES is a symmetric key block cipher in which the block size is 64 bits and the key size is 64 bits. It is vulnerable to some attacks and is hence not that popularly used.

6. Cryptanalysis is used \_\_\_\_\_

- a) to find some insecurity in a cryptographic scheme
- b) to increase the speed
- c) to encrypt the data
- d) to make new ciphers

[View Answer](#)

Answer: a

Explanation: Cryptanalysis is a field of study in which a cryptographic scheme is intentionally tried to breach in order to find flaws and insecurities. It is used to make sure that the scheme is least vulnerable to attacks.

7. Which one of the following is a cryptographic protocol used to secure HTTP connection?

- a) stream control transmission protocol (SCTP)
- b) transport layer security (TLS)
- c) explicit congestion notification (ECN)
- d) resource reservation protocol

[View Answer](#)

Answer: b

Explanation: TLS has strong message authentication and key-material generation to prevent eavesdropping, tampering and message forgery. It has been used since the year 1996.

8. Voice privacy in GSM cellular telephone protocol is provided by \_\_\_\_\_

- a) A5/2 cipher
- b) b5/4 cipher
- c) b5/6 cipher
- d) b5/8 cipher

[View Answer](#)

Answer: a

Explanation: The A5/2 cipher was published in the year 1996 and was cryptanalysed in the same year within a month. Its use was discontinued from the year 2006 as it was really weak.

9. ElGamal encryption system is \_\_\_\_\_

- a) symmetric key encryption algorithm
- b) asymmetric key encryption algorithm
- c) not an encryption algorithm
- d) block cipher method

[View Answer](#)

Answer: b

Explanation: The ElGamal encryption system was made by Taher Elgamal in the year 1985 and is an asymmetric key algorithm. It is popularly used in PGP and other systems.

10. Cryptographic hash function takes an arbitrary block of data and returns \_\_\_\_\_

- a) fixed size bit string
- b) variable size bit string

- c) both fixed size bit string and variable size bit string
- d) variable sized byte string

[View Answer](#)

Answer: a

Explanation: Cryptographic hash functions are used in digital signatures and message authentication codes. The only issue with it is that it returns the same hash value every time for a message making it vulnerable to attackers to evaluate and break the cipher.

Computer Networks Questions & Answers –

Ports

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Ports".

1. Multiple objects can be sent over a TCP connection between client and server in a persistent HTTP connection.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Persistent connections are kept active after completing transaction so that multiple objects can be sent over the same TCP connection.

2. HTTP is \_\_\_\_\_ protocol.

- a) application layer
- b) transport layer
- c) network layer
- d) data link layer

[View Answer](#)

Answer: a

Explanation: HTTP is an Application layer protocol used to define how messages are formatted and transmitted through the World Wide Web.

3. In the network HTTP resources are located by \_\_\_\_\_

- a) Uniform resource identifier
- b) Unique resource locator
- c) Unique resource identifier
- d) Union resource locator

[View Answer](#)

Answer: a

Explanation: The Uniform Resource Identifier is a name and locator for the resource to be located by the HTTP. The URLs and URNs are derived through the identifier.

4. HTTP client requests by establishing a \_\_\_\_\_ connection to a particular port on the server.

- a) User datagram protocol
- b) Transmission control protocol
- c) Border gateway protocol
- d) Domain host control protocol

[View Answer](#)

Answer: b

Explanation: HTTP clients perform requests using a TCP connection, because the TCP connection provides a more reliable service. UDP is not a reliable protocol, border gateway protocol is used on top of TCP, while domain host control protocol is a network layer protocol.

5. In HTTP pipelining \_\_\_\_\_

- a) multiple HTTP requests are sent on a single TCP connection without waiting for the corresponding responses
- b) multiple HTTP requests cannot be sent on a single TCP connection
- c) multiple HTTP requests are sent in a queue on a single TCP connection
- d) multiple HTTP requests are sent at random on a single TCP connection

[View Answer](#)

Answer: a

Explanation: HTTP pipelining helps the client make multiple requests without having to wait for each response, thus saving a lot of time and bandwidth for the client.

6. FTP server listens for connection on which port number?

- a) 20
- b) 21

c) 22

d) 23

[View Answer](#)

Answer: b

Explanation: Port 20 is used for FTP data. Port 22 is used for SSH remote login. Port 23 is used for TELNET.

7. In FTP protocol, a client contacts a server using \_\_\_\_\_ as the transport protocol.

a) Transmission control protocol

b) User datagram protocol

c) Datagram congestion control protocol

d) Stream control transmission protocol

[View Answer](#)

Answer: a

Explanation: The clients use the Transmission Control Protocol for FTP as it's more reliable than UDP, DCCP, and SCTP, and reliability of file transfer is required to be as high as possible for FTP.

8. In Active mode FTP, the client initiates both the control and data connections.

a) True

b) False

[View Answer](#)

Answer: b

Explanation: In Passive mode of FTP, the client initiates both data and control connections, while in Active mode, the client initiates the control connection and then the server initiates the data connection.

9. The File Transfer Protocol is built on \_\_\_\_\_

a) data centric architecture

b) service oriented architecture

c) client server architecture

d) connection oriented architecture

[View Answer](#)

Answer: c

Explanation: The FTP connection includes a Server and a Client which wish to share files. The server can have multiple clients at the same time while the client communicates with only one server at a time.

10. In File Transfer Protocol, data transfer cannot be done in \_\_\_\_\_

- a) stream mode
- b) block mode
- c) compressed mode
- d) message mode

[View Answer](#)

Answer: d

Explanation: In Stream mode, the data is transferred in a continuous stream. In Block mode, data is transferred after being divided into smaller blocks. In Compressed mode, data is transferred after being compressed using some compression algorithm.

Computer Networks Questions & Answers –

Socket Programming

[« Prev](#)

[Next »](#)

This set of Computer Networks Assessment Questions and Answers focuses on "Socket Programming".

1. Which methods are commonly used in Server Socket class?

- a) Public Output Stream get Output Stream ()
- b) Public Socket accept ()
- c) Public synchronized void close ()
- d) Public void connect ()

[View Answer](#)

Answer: b

Explanation: The Public socket accept () method is used by the ServerSocket class to accept the connection request of exactly one client at a time. The client requests by initializing the socket object with the servers IP address.

2. Which constructor of Datagram Socket class is used to create a datagram socket and binds it with the given Port Number?

- a) Datagram Socket(int port)
- b) Datagram Socket(int port, Int Address address)
- c) Datagram Socket()
- d) Datagram Socket(int address)

[View Answer](#)

Answer: b

Explanation: Datagram Socket (int port, Int Address address) is used to create a datagram socket. A datagram socket is created for connection-less communication between the server and the client. There is no accept() method in this class.

3. The client in socket programming must know which information?

- a) IP address of Server
- b) Port number
- c) Both IP address of Server & Port number
- d) Only its own IP address

[View Answer](#)

Answer: c

Explanation: The client in socket programming must know IP address of Server as it has to use that IP address in order to initialize the socket class constructor. That is how the client requests a connection to the server.

4. The URL Connection class can be used to read and write data to the specified resource that is referred by the URL.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The URL Connection class can be used to read and write data to the specified resource referred by the URL. A connection to the URL is initialized by the OpenConnection() method of the class.

5. Datagram is basically just a piece of information but there is no guarantee of its content, arrival or arrival time.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: Datagram is basically some information travelling between the sender and the receiver, but there is no guarantee of its content, arrival or arrival time. A Datagram socket class object is created to make a datagram connection between the server and the client.

6. TCP, FTP, Telnet, SMTP, POP etc. are examples of \_\_\_\_\_

- a) Socket
- b) IP Address
- c) Protocol
- d) MAC Address

[View Answer](#)

Answer: c

Explanation: TCP, FTP, Telnet, SMTP, POP etc. are examples of Protocol. Out of them, TCP is a transport layer protocol and FTP, TELNET, SMTP and POP are application layer protocols.

7. What does the java.net.InetAddress class represent?

- a) Socket
- b) IP Address
- c) Protocol
- d) MAC Address

[View Answer](#)

Answer: b

Explanation: The java.net.InetAddress class represents IP Address of a particular specified host. It can be used to resolve the host name from the IP address or the IP address from the host name.

8. The flush () method of Print Stream class flushes any un-cleared buffers in the memory.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The flush () method of Print Stream class flushes any un cleared buffers in memory.

9. Which classes are used for connection-less socket programming?

- a) Datagram Socket
- b) Datagram Packet
- c) Both Datagram Socket & Datagram Packet
- d) Server Socket

[View Answer](#)

Answer: c

Explanation: Datagram is basically some information travelling between the sender and the receiver, but there is no guarantee of its content, arrival or arrival time.

Datagram Socket, Datagram Packet are used for connection-less socket programming, while Server Socket is used for connection-oriented socket programming.

10. In Inet Address class, which method returns the host name of the IP Address?

- a) Public String get Hostname()
- b) Public String getHostAddress()
- c) Public static InetAddress get Localhost()
- d) Public getByName()

[View Answer](#)

Answer: a

Explanation: In Inet Address class public String getHostname() method returns the host name of the IP Address. The getHostAddress() method returns the IP address of the given host name.

Computer Networks Questions & Answers –

Cookies

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Cookies".

1. Cookies were originally designed for \_\_\_\_\_

- a) Client side programming
- b) Server side programming
- c) Both Client side programming and Server side programming
- d) Socket programming

[View Answer](#)

Answer: b

Explanation: Cookies were originally designed for server side programming, and at the lowest level, they are implemented as an extension to the HTTP protocol. They were introduced with the intention of providing a better user experience for the websites.

2. The Cookie manipulation is done using which property?

- a) cookie
- b) cookies
- c) manipulate
- d) manipulate cookie

[View Answer](#)

Answer: a

Explanation: The cookie property sets or returns all name/value pairs of cookies in the current document. There are no methods involved: cookies are queried, set, and deleted by reading and writing the cookie property of the Document object using specially formatted strings.

3. Which of the following explains Cookies nature?

- a) Non Volatile
- b) Volatile
- c) Intransient
- d) Transient

[View Answer](#)

Answer: d

Explanation: Cookies are transient by default; the values they store last for the duration of the web browser session but are lost when the user exits the browser. While the browsing session is active the cookie stores the user values in the user's storage itself and accesses them.

4. Which attribute is used to extend the lifetime of a cookie?

- a) Higher-age
- b) Increase-age
- c) Max-age
- d) Lifetime

[View Answer](#)

Answer: c

Explanation: If you want a cookie to last beyond a single browsing session, you must tell the browser how long (in seconds) you would like it to retain the cookie by specifying a max-age attribute. A number of seconds until the cookie expires. A zero or negative number will kill the cookie immediately.

5. Which of the following defines the Cookie visibility?

- a) Document Path
- b) LocalStorage

- c) SessionStorage
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: sessionStorage, localStorage and Document path all are used to store data on the client-side. Each one has its own storage and expiration limit. Cookie visibility is scoped by the document origin as Local Storage and Session Storage are, and also by document path.

6. Which of the following can be used to configure the scope of the Cookie visibility?

- a) Path
- b) Domain
- c) Both Path and Domain
- d) Server

[View Answer](#)

Answer: d

Explanation: The Cookie visibility scope is configurable through cookie attributes path and domain. Domain attribute in the cookie is used to specify the domain for which the cookie is sent. Path includes the Path attribute in the cookie to specify the path for which this cookie is sent.

7. How can you set a Cookie visibility scope to local Storage?

- a) /
- b) %
- c) \*
- d) #

[View Answer](#)

Answer: a

Explanation: Setting the path of a cookie to "/" gives scoping like that of localStorage and also specifies that the browser must transmit the cookie name and value to the server whenever it requests any web page on the site.

8. Which of the following is a Boolean cookie attribute?

- a) Bool
- b) Secure
- c) Lookup

d) Domain

[View Answer](#)

Answer: b

Explanation: The final cookie attribute is a boolean attribute named secure that specifies how cookie values are transmitted over the network. By default, cookies are insecure, which means that they are transmitted over a normal, insecure HTTP connection. If a cookie is marked secure, however, it is transmitted only when the browser and server are connected via HTTPS or another secure protocol.

9. Which of the following function is used as a consequence of not including semicolons, Commas or whitespace in the Cookie value?

- a) encodeURIComponent()
- b) encodeURI()
- c) encodeComponent()
- d) encode()

[View Answer](#)

Answer: a

Explanation: Cookie values cannot include semicolons, commas, or whitespace. For this reason, you may want to use the core JavaScript global function encodeURIComponent() to encode the value before storing it in the cookie.

10. What is the constraint on the data per cookie?

- a) 2 KB
- b) 1 KB
- c) 4 KB
- d) 3 KB

[View Answer](#)

Answer: c

Explanation: Each cookie can hold up to only 4 KB. In practice, browsers allow many more than 300 cookies total, but the 4 KB size limit may still be enforced by some. Storage of a session has to be a minimum of 5MB.

Computer Networks Questions & Answers –

Web Caching

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Web Caching".

1. What does REST stand for?

- a) Represent State Transfer
- b) Representational State Transfer
- c) Representing State Transfer
- d) Representation State Transfer

[View Answer](#)

Answer: b

Explanation: REST stands for Representational State Transfer and is a software architecture style in which the server sends a representation of the state of the resource that it requests. It provides interoperability between the systems.

2. Which of the following protocol is used by Restful web services as a medium of communication between client and server?

- a) HTTP
- b) FTP
- c) Gopher
- d) TELNET

[View Answer](#)

Answer: a

Explanation: Restful web services make use of HTTP protocol as a medium of communication between client and server. The REST architecture was known as the HTTP object model back in the year 1994.

3. Which of the following is not a good practice to create a standard URI for a web service?

- a) Maintain Backward Compatibility
- b) Use HTTP Verb
- c) Using spaces for long resource names
- d) Use lowercase letters

[View Answer](#)

Answer: c

Explanation: We must use hyphens (-) or underscores (\_) instead of spaces to represent long resource names. It may lead to the resource to be less recognizable for the system if we use spaces instead.

4. Which of the following HTTP methods should be idempotent in nature?

- a) OPTIONS
- b) DELETE
- c) POST
- d) HEAD

[View Answer](#)

Answer: b

Explanation: DELETE operation should be idempotent, means their result will always same no matter how many times these operations are invoked. Also, the PUT operation is supposed to be idempotent.

5. Which of the following directive of Cache Control Header of HTTP response indicates that resource is cachable by only client and server?

- a) Public
- b) Private
- c) Nocache/nostore
- d) Maxage

[View Answer](#)

Answer: b

Explanation: Private directive indicates that resource is cachable by only client and server; no intermediary can cache the resource. But if we use the public directive, it indicates that the resource may be cachable by any intermediary component.

6. Which of the following HTTP Status code means CREATED, when a resource is successful created using POST or PUT request?

- a) 200
- b) 201
- c) 204
- d) 304

[View Answer](#)

Answer: b

Explanation: HTTP Status Code 201 means CREATED, when a resource is successful created using POST or PUT request. The code 200 means success i.e. OK, code 204 means NO CONTENT, and the code 304 means NOT MODIFIED.

7. Which of the following annotation of JAX RS API is used to annotate a method used to create resource?

- a) @Path
- b) @GET
- c) @PUT
- d) @POST

[View Answer](#)

Answer: C

Explanation: @PUT is the HTTP request that is used to create resource and also define a complete resource path. @POST may also be used to create a resource but it won't define a resource path i.e. an accessing medium.

8. Which of the following annotation of JAX RS API binds the parameter passed to method to a HTTP matrix parameter in path?

- a) @PathParam
- b) @QueryParam
- c) @MatrixParam
- d) @HeaderParam

[View Answer](#)

Answer: c

Explanation: @MatrixParam is the annotation that binds the parameter passed to method to a HTTP matrix parameter in path, while @QueryParam binds to a query parameter, @PathParam binds to a value and @HeaderParam binds to the HTTP header in the path.

9. In REST architecture, a REST Server simply provides access to resources and REST client accesses and presents the resources.

- a) False
- b) True

[View Answer](#)

Answer: b

Explanation: In REST architecture, a REST Server simply provides access to resources and REST client accesses and presents the resources. It is popularly used because it makes efficient use of the bandwidth and can be cached for better performance and scalability.

10. POST operation should be idempotent.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: POST operation can cause different result so they are not idempotent. The DELETE and PUT operations are idempotent as they invoke the same result every time they are called.

Computer Networks Questions & Answers –

Packet Forwarding and Routing

[« Prev](#)

[Next »](#)

This set of Computer Networks online test focuses on “Packet Forwarding and Routing”.

1. The term that is used to place packet in its route to its destination is called

- 
- a) Delayed
  - b) Urgent
  - c) Forwarding
  - d) Delivering

[View Answer](#)

Answer: c

Explanation: Forwarding is done by the nodes in the path from source to destination, that are not the intended destination for the packet in order to pass the packet to the next node in the path. The destination machine does not forward the packet to any other node.

2. A second technique to reduce routing table and simplify searching process is called

- 
- a) Network-Specific Method
  - b) Network-Specific Motion
  - c) Network-Specific Maintaining
  - d) Network-Specific Membership

[View Answer](#)

Answer: a

Explanation: In the network specific forwarding method, there is only one record, the destination of the packet, in the routing table and not the other hosts of the network. The other two forwarding methods are the default method and the next-hop method.

3. Next-Hop Method is used to reduce contents of a \_\_\_\_\_

- a) Revolving table
- b) Rotating Table
- c) Routing Table
- d) Re-allocate table

[View Answer](#)

Answer: c

Explanation: In the next-hop forwarding method, the routing table of each router in the path contains the address of only the next hop in the path of packet. This method is suitable for short distances only.

4. Several techniques can make size of routing table manageable and also handle issues such as \_\_\_\_\_

- a) Maturity
- b) Error reporting
- c) Tunneling
- d) Security

[View Answer](#)

Answer: d

Explanation: The size of the routing table in the technique must be manageable for the network nodes i.e. it must not be too big. Security of the forwarding packet is the highest priority for a technique and must be high enough so that only authorized senders and receivers can access the packet's content.

5. Host-specific routing is used for purposes such as checking route or providing \_\_\_\_\_

- a) Network Measures
- b) Security Measures
- c) Routing Measures
- d) Delivery Measures

[View Answer](#)

Answer: b

Explanation: In host-specific routing, the route of the packet is defined based on the exact match of the packet's IP with the routing table entry of the host. It provides the best security for the packet as the packet is forwarded only to routers in the predefined path.

6. In Unicast routing, if instability is between three nodes, stability cannot be \_\_\_\_\_

- a) Stable
- b) Reversed
- c) Guaranteed
- d) Forward

[View Answer](#)

Answer: c

Explanation: In Unicast routing, there is only sender and one receiver. So, if there is instability between three nodes, in which one is sender, one is receiver and one is the router in the path, there is no other path available for the packet and the stability of the network is not guaranteed.

7. In Unicast Routing, Dijkstra algorithm creates a shortest path tree from a \_\_\_\_\_

- a) Graph
- b) Tree
- c) Network
- d) Link

[View Answer](#)

Answer: a

Explanation: The Djikstra's shortest path algorithm is the fastest among the algorithms for finding the shortest path in a graph. But it is a greedy method based algorithm so it does not guarantee the shortest path every time.

8. In Multicast Routing Protocol, flooding is used to broadcast packets but it creates \_\_\_\_\_

- a) Gaps
- b) Loops
- c) Holes
- d) Links

[View Answer](#)

Answer: b

Explanation: In multicast routing, there is one sender and many receivers. So flooding is the most basic method to forward packets to many receivers. The one issue with flooding is that it creates routing loops. One loop prevention method is that the routers will not send the packet to a node where the packet has been received before.

9. RPF stands for \_\_\_\_\_

- a) Reverse Path Forwarding

- b) Reverse Path Failure
- c) Reverse Packet Forwarding
- d) Reverse Protocol Failure

[View Answer](#)

Answer: a

Explanation: Reverse Path Forwarding is a loop-free forwarding method for multi-cast routing in modern systems. The method focuses on forwarding the packet away from the source IP in each iteration to make sure there is no loops.

10. LSP stands for \_\_\_\_\_

- a) Link Stable Packet
- b) Link State Packet
- c) Link State Protocol
- d) Link State Path

[View Answer](#)

Answer: b

Explanation: A Link State Packet is a packet created by a router that lists its neighboring nodes and routers in link state routing protocol. It is shared with other routers to find the shortest path from a source to the destination.

Computer Networks Questions & Answers –

Security In The Internet

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Security In The Internet”.

1. IPSec is designed to provide security at the \_\_\_\_\_

- a) transport layer
- b) network layer
- c) application layer
- d) session layer

[View Answer](#)

Answer: b

Explanation: IPSec is a set of protocols used to provide authentication, data integrity

and confidentiality between two machines in an IP network. In the TCP/IP model, it provides security at the IP layer i.e. the network layer.

2. In tunnel mode, IPSec protects the \_\_\_\_\_

- a) Entire IP packet
- b) IP header
- c) IP payload
- d) IP trailer

[View Answer](#)

Answer: a

Explanation: In the tunnel mode, IPSec adds control bits into the packets to encrypt the entire packet between the IPSec endpoints. Using encryption, it provides secure communication between the two endpoints.

3. Network layer firewall works as a \_\_\_\_\_

- a) frame filter
- b) packet filter
- c) signal filter
- d) content filter

[View Answer](#)

Answer: b

Explanation: As you know, firewalls are available as hardware appliances, as software-only, or a combination of the two. In every case, the purpose of a firewall is to isolate your trusted internal network (or your personal PC) from the dangers of unknown resources on the Internet and other network connections that may be harmful. The firewall prevents unauthorized access to your internal, trusted network from outside threats.

4. Network layer firewall has two sub-categories called \_\_\_\_\_

- a) stateful firewall and stateless firewall
- b) bit oriented firewall and byte oriented firewall
- c) frame firewall and packet firewall
- d) network firewall and data firewall

[View Answer](#)

Answer: a

Explanation: Most network layer firewalls can operate as stateful or stateless firewalls, creating two subcategories of the standard network layer firewall. Stateful firewalls have the advantage of being able to track packets over a period of time for

greater analysis and accuracy — but they require more memory and operate more slowly. Stateless firewalls do not analyze past traffic and can be useful for systems where speed is more important than security, or for systems that have very specific and limited needs. For example, a computer that only needs to connect to a particular backup server does not need the extra security of a stateful firewall.

5. WPA2 is used for security in \_\_\_\_\_

- a) ethernet
- b) bluetooth
- c) wi-fi
- d) e-mail

[View Answer](#)

Answer: c

Explanation: WPA2 or WiFi Protected Access 2 is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

6. An attempt to make a computer resource unavailable to its intended users is called \_\_\_\_\_

- a) denial-of-service attack
- b) virus attack
- c) worms attack
- d) botnet process

[View Answer](#)

Answer: a

Explanation: In a Denial of Service attack, the attacker won't let the victims access the network by using a certain method that ensures that an essential network resource is unavailable to the victim. The methods that the attacker can use are vulnerability attack, bandwidth flooding and connection flooding.

7. Extensible authentication protocol is authentication framework frequently used in \_\_\_\_\_

- a) wired personal area network
- b) wireless networks
- c) wired local area network
- d) wired metropolitan area network

[View Answer](#)

Answer: b

Explanation: The Extensible Authentication Protocol (EAP) is an authentication protocol used to connect a network node to the Internet. It designed through extending the methods used by the Point-to-Point Protocol for authentication.

8. Pretty good privacy (PGP) is used in \_\_\_\_\_

- a) browser security
- b) email security
- c) FTP security
- d) wifi security

[View Answer](#)

Answer: b

Explanation: PGP is an encryption method used in e-mail security to encrypt and decrypt the content of an e-mail transmitted over the internet. It makes sure that the message cannot be stolen by other unauthorized users.

9. PGP encrypts data by using a block cipher called \_\_\_\_\_

- a) international data encryption algorithm
- b) private data encryption algorithm
- c) internet data encryption algorithm
- d) local data encryption algorithm

[View Answer](#)

Answer: a

Explanation: The IDEA was designed in 1991 by Xuejia Lai and James Massey.

Before IDEA, PGP used the cipher method BassOmatic.

10. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called \_\_\_\_\_

- a) DNS lookup
- b) DNS hijacking
- c) DNS spoofing
- d) DNS authorizing

[View Answer](#)

Answer: c

Explanation: In DNS spoofing, also known as DNS cache poisoning, an attacker gets the valid credentials from a victim by spoofing the intended resource, and tricking the victim to give his/her valid authorization credentials.

## Computer Networks Questions & Answers –

OSPF

« Prev

Next »

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "OSPF".

1. Open Shortest Path First (OSPF) is also called as \_\_\_\_\_

- a) Link state protocol
- b) Error-correction protocol
- c) Routing information protocol
- d) Border gateway protocol

[View Answer](#)

Answer: a

Explanation: In OSPF, the link state of each path is checked, and then the shortest path is chosen among only the open state links. Each OSPF router monitors the cost of the link to each of its neighbors and then floods the link state information to other routers in the network.

2. The computation of the shortest path in OSPF is usually done by \_\_\_\_\_

- a) Bellman-ford algorithm
- b) Routing information protocol
- c) Dijkstra's algorithm
- d) Distance vector routing

[View Answer](#)

Answer: c

Explanation: Shortest path in OSPF is usually computed by Dijkstra's algorithm. It was proposed by Edsger W. Dijkstra in the year 1956. It is a greedy method algorithm and hence may not guarantee the shortest path every time, but is really fast.

3. Which of the following is false with respect to the features of OSPF?

- a) Support for fixed-length subnetting by including the subnet mask in the routing message
- b) More flexible link cost than can range from 1 to 65535
- c) Use of designated router

d) Distribution of traffic over multiple paths that have equal cost to the destination

[View Answer](#)

Answer: a

Explanation: OSPF provides support for variable-length sunbathing by including the subnet mask in the routing message. For fixed length subnets, there is no requirement for including the subnet mask in the routing message as there is just one subnet mask for all the subnets.

4. In OSPF, which protocol is used to discover neighbour routers automatically?

- a) Link state protocol
- b) Error-correction protocol
- c) Routing information protocol
- d) Hello protocol

[View Answer](#)

Answer: d

Explanation: Hello protocol is used to discover neighboring routers automatically. It makes sure that the communication between neighbors is bidirectional. It's similar to the real world moral construct of saying "Hello" to initialize the communication.

5. Which of the following is not a type of OSPF packet?

- a) Hello
- b) Link-state request
- c) Link-state response
- d) Link-state ACK

[View Answer](#)

Answer: c

Explanation: The five types of OSPF packets are: Hello, Database description, Linkstate request, Link-state update, and Link-state ACK. There is no Link-state response packet; the neighbor router sends a Link-state update packet as a response to the Linkstate request packet if there is an update in the routing table.

6. What is the correct order of the operations of OSPF?

- i – Hello packets
  - ii – Propagation of link-state information and building of routing tables
  - iii – Establishing adjacencies and synchronization of database
- a) i-ii-iii
  - b) i-iii-ii

- c) iii-ii-i
- d) ii-i-iii

[View Answer](#)

Answer: b

Explanation: OSPF first implements a hello protocol. Then it later on tries to establish synchronisation with database. Later on building of routing tables is done.

7. In OSPF header, which field is used to detect errors in the packet?

- a) Type
- b) Area ID
- c) Authentication type
- d) Checksum

[View Answer](#)

Answer: d

Explanation: Checksum field is used to detect errors. It makes sure that the data portions that are being sent are all in integrity. It can detect duplicated bits. Once an error is detected, the sender has to re-transmit the data as it won't receive an acknowledgement.

8. In OSPF database descriptor packet, if there are more database descriptor packets in the flow, 'M' field is set to \_\_\_\_\_

- a) 1
- b) 0
- c) more
- d) -1

[View Answer](#)

Answer: a

Explanation: The "M" bit is the more bit, which indicates that there are more packets to be received in the descriptor packet flow whenever it is set to 1. There is also an "I" bit which indicates if the packet is first in the flow.

9. In OSPF database descriptor packet, which field is used to indicate that the router is master?

- a) M
- b) MS
- c) I
- d) Options

[View Answer](#)

Answer: b

Explanation: The MS bit is used to indicate if the origin of the packet is a master or a slave. If it is set to 1, the source of the packet is a master, and if it is set to 0, the source of the packet is a slave.

10. In OSPF database descriptor packet, which field is used to detect a missing packet?

- a) LSA header
- b) MS
- c) Database descriptor sequence number
- d) Options

[View Answer](#)

Answer: c

Explanation: Sequence number field is used to detect a missing packet. The packets are to be received in order of the sequence number, so if the receiver detects that there is a sequence number skipped or missing in the order, it stops processing the further received packets and informs the sender to retransmit the packets in sequence.

Computer Networks Questions & Answers –

OSPF Configuration

[« Prev](#)

[Next »](#)

This set of Computer Networks online quiz focuses on “OSPF Configuration”.

1. An OSPF router receives an LSA, the router checks its sequence number, and this number matches the sequence number of the LSA that the receiving router already has. What does the receiving router do with the LSA?

- a) Ignores the LSA
- b) Adds it to the database
- c) Sends newer LSU update to source router
- d) Floods the LSA to the other routers

[View Answer](#)

Answer: a

Explanation: When the OSPF router receives an LSA, the router checks its sequence

number. If this number matches the sequence number of the LSA that the receiving router already has, the router ignores the LSA.

2. An OSPF router receives an LSA. The router checks its sequence number and finds that this number is higher than the sequence number it already has. Which two tasks does the router perform with the LSA?

- a) Ignores the LSA
- b) Adds it to the database
- c) Sends newer LSU update to source router
- d) Floods the LSA to the other routers

[View Answer](#)

Answer: b

Explanation: An OSPF router receives an LSA. If the router checks its sequence number and finds that the number is higher than the sequence number of the LSA that it already has, the router adds it to the database, and then floods the LSA to the other routers.

3. An OSPF router receives an LSA. The router checks its sequence number and finds that this number is lower than the sequence number it already has. What does the router do with the LSA?

- a) ignores the LSA
- b) adds it to the database
- c) sends newer LSU update to source router
- d) floods the LSA to the other routers

[View Answer](#)

Answer: c

Explanation: An OSPF router receives an LSA. If the router checks its sequence number and finds that this number is lower than the sequence number that it already has, the router sends newer LSU update to source router. The router then adds it to the database and floods it to the other routers.

4. Each LSA has its own age timer. By default, how long does an LSA wait before requiring an update?

- a) 30 seconds
- b) 1 minute
- c) 30 minutes
- d) 1 hour

[View Answer](#)

Answer: c

Explanation: Each LSA has its own age timer. By default, an LSA waits for 30 minutes before requiring an update. The router then has to send a LSR (Link State Request) to its neighbors to get an update.

5. Distance vector protocols use the concept of split horizon, but link-state routing protocols, such as OSPF, do not.

- a) True
- b) False

[View Answer](#)

Answer: b

Explanation: In Distance vector routing protocols, there is a problem called count-to-infinity which occurs regularly. So, to make sure that it does not occur, the split horizon algorithm is used. There is no requirement for it in OSPF.

6. The outcome of Dijkstra's calculation is used to populate the \_\_\_\_\_

- a) Topology table
- b) Routing table
- c) Neighbor table
- d) Adjacency table

[View Answer](#)

Answer: b

Explanation: The outcome of Djikstra's calculation is the main source of entries in the routing table as it is the algorithm that is used to find the shortest path in OSPF. The calculations are done after receiving every new LSU.

7. What is the IP protocol number for OSPF packets?

- a) 89
- b) 86
- c) 20
- d) 76

[View Answer](#)

Answer: a

Explanation: 89 is the IP protocol number for OSPF packets. 86 is the protocol number for DGP, 76 is the protocol number for Backroom-SATNET-Monitoring and 20 is the protocol number for Host Monitoring Protocol.

8. Which packet is NOT an OSPF packet type?

- a) LSU
- b) LSR
- c) DBD
- d) Query

[View Answer](#)

Answer: d

Explanation: LSU is the Link State Update packet, LSR is the Link State Request packet and DBD is the Database Descriptor packet in OSPF. Query packet is NOT an OSPF packet type.

9. Which multicast address does the OSPF Hello protocol use?

- a) 224.0.0.5
- b) 224.0.0.6
- c) 224.0.0.7
- d) 224.0.0.8

[View Answer](#)

Answer: a

Explanation: Hello protocol is used to discover neighboring routers automatically. It makes sure that the communication between neighbors is bidirectional. The multicast address that the OSPF Hello protocol uses is 224.0.0.5.

10. The Hello protocol sends periodic updates to ensure that a neighbor relationship is maintained between adjacent routers.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: The Hello protocol sends periodic updates to ensure that a neighbor relationship is maintained between adjacent routers. It's similar to the real world moral construct of saying "Hello" to initialize the communication.

11. DBD packets are involved during which two states?

- a) Exstart and exchange
- b) Loading and Two-way
- c) Init and Full
- d) Down and Loading

[View Answer](#)

Answer: a

Explanation: DBD stands for Database Descriptor. DBD packets are involved during the two states Exstart and Exchange. In exstart, the master and the slaves are decided and in the exchange state, the DBD is exchanged among the neighbors.

12. At which interval does OSPF refresh LSAs?

- a) 10 seconds
- b) 30 seconds
- c) 30 minutes
- d) 1 hour

[View Answer](#)

Answer: d

Explanation: Each LSA has its own age timer. By default, an LSA waits for 30 minutes before requiring an update. So to make sure that each router first has an up-to-date LSA, OSPF refreshes LSAs after every 1 hour.

13. Which field is NOT a field within an OSPF packet header?

- a) Packet length
- b) Router ID
- c) Authentication type
- d) Maxage time

[View Answer](#)

Answer: d

Explanation: The packet length field gives the length of the packet in bits. The Authentication type field gives the type of authentication used. The router ID field gives the ID of the source router of the packet. In an OSPF packet header, there is no field called Maxage time.

14. Which two commands are required for basic OSPF configuration?

- a) “[Network mask] area [area-id]” and “Router ospf [process-id]”
- b) “[Wildcard-mask] area [area-id]” and “[Network mask] area [area-id]”
- c) Only “Router ospf [process-id]”
- d) “[Wildcard-mask] area [area-id]” and “Router ospf [process-id]”

[View Answer](#)

Answer: d

Explanation: The “Router ospf [process-id]” command enables OSPF routing protocol in the router and the “[Wildcard-mask] area [area-id]” command is used to select the

interfaces that we want to include in the OSPF process. That is enough for the basic configuration of OSPF in a router.

15. Which OSPF show command describes a list of OSPF adjacencies?

- a) Show ip ospf interface
- b) Show ip ospf
- c) Show ip route
- d) Show ip ospf neighbor

[View Answer](#)

Answer: d

Explanation: The "Show ip ospf neighbor" command is the OSPF show command that can describe a list of OSPF adjacencies i.e. the list of adjacent nodes or neighbors.

The router will only communicate with its neighbors directly.

Computer Networks Questions & Answers –

Datagram Networks

[« Prev](#)

[Next »](#)

This set of Computer Networks Questions and Answers for Aptitude test focuses on "Datagram Networks".

1. Datagram switching is done at which layer of OSI model?

- a) Network layer
- b) Physical layer
- c) Application layer
- d) Transport layer

[View Answer](#)

Answer: a

Explanation: Datagram switching is normally done at network layer. In datagram switching, the datagram stream need not be in order as each datagram can take different routes to the destination.

2. Packets in datagram switching are referred to as \_\_\_\_\_

- a) Switches
- b) Segments
- c) Datagrams

d) Data-packets

[View Answer](#)

Answer: c

Explanation: As the name suggests, in datagram switching packets are called as datagram. Each datagram/packet is treated as an individual entity and routed independently through the network.

3. Datagram networks mainly refers to \_\_\_\_\_

- a) Connection oriented networks
- b) Connection less networks
- c) Telephone networks
- d) Internetwork

[View Answer](#)

Answer: b

Explanation: The switch does not keep the information about the connection state, hence it is connection less. There is no need for establishing a handshake to begin the transmission in such networks.

4. Datagrams are routed to their destinations with the help of \_\_\_\_\_

- a) Switch table
- b) Segments table
- c) Datagram table
- d) Routing table

[View Answer](#)

Answer: c

Explanation: Routing table is used to route the packets to their destinations. The packet/datagram header contains the destination header for the whole journey to source to the destination through the routers.

5. The main contents of the routing table in datagram networks are \_\_\_\_\_

- a) Source and Destination address
- b) Destination address and Output port
- c) Source address and Output port
- d) Input port and Output port

[View Answer](#)

Answer: b

Explanation: Routing table contains destination address and output port to route the

packets to their destinations. The port address specifies the particular application that the packet has to be forwarded to after it has reached the destination.

6. Which of the following remains same in the header of the packet in a datagram network during the entire journey of the packet?

- a) Destination address
- b) Source address
- c) Checksum
- d) Padding

[View Answer](#)

Answer: a

Explanation: Destination address remains same in the header during the entire journey of the packet. There is no pre-decided route for the packets so each datagram/packet is treated as an individual entity and routed independently through the network.

7. Which of the following is true with respect to the delay in datagram networks?

- a) Delay is greater than in a virtual circuit network
- b) Each packet may experience a wait at a switch
- c) Delay is not uniform for the packets of a message
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: The delay of each packet in a datagram network is different as each packet might take a different route to the destination. The delay includes the propagation delay and the processing delay that is induced at each stop/switch that the packet encounters in its journey.

8. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.

- a) Stack
- b) Queue
- c) Hash
- d) Routing table

[View Answer](#)

Answer: b

Explanation: When there are too many packets to be transmitted and the transmission line gets blocked while transmitting some packets, the remaining packets are stored in

queue during delay and are served as first in first out. The delay is called as queuing delay.

9. The probability of the error in a transmitted block \_\_\_\_\_ with the length of the block

- a) Remains same
- b) Decreases
- c) Increases
- d) Is not proportional

[View Answer](#)

Answer: c

Explanation: Probability of the error in a transmitted block increases with the length of the block. Hence, the blocks should be as short as possible for ideal transmission with low possibility of an error.

10. Which of the following is false with respect to the datagram networks?

- a) Number of flows of packets are not limited
- b) Packets may not be in order at the destination
- c) Path is not reserved
- d) Delay is the same for all packets in a flow

[View Answer](#)

Answer: d

Explanation: The delay of each packet in a datagram network is different as each packet might take a different route to the destination. This happens because there is no pre-decided route for the packets.

Computer Networks Questions & Answers –

Firewalls

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Firewalls”.

1. Network layer firewall works as a \_\_\_\_\_

- a) Frame filter
- b) Packet filter

- c) Content filter
- d) Virus filter

[View Answer](#)

Answer: b

Explanation: As you know, firewalls are available as hardware appliances, as software-only, or a combination of the two. In every case, the purpose of a firewall is to isolate your trusted internal network (or your personal PC) from the dangers of unknown resources on the Internet and other network connections that may be harmful. The firewall prevents unauthorized access to your internal, trusted network from outside threats.

2. Network layer firewall has two sub-categories as \_\_\_\_\_

- a) State full firewall and stateless firewall
- b) Bit oriented firewall and byte oriented firewall
- c) Frame firewall and packet firewall
- d) Network layer firewall and session layer firewall

[View Answer](#)

Answer: a

Explanation: Most network layer firewalls can operate as stateful or stateless firewalls, creating two subcategories of the standard network layer firewall. Stateful firewalls have the advantage of being able to track packets over a period of time for greater analysis and accuracy — but they require more memory and operate more slowly. Stateless firewalls do not analyze past traffic and can be useful for systems where speed is more important than security, or for systems that have very specific and limited needs. For example, a computer that only needs to connect to a particular backup server does not need the extra security of a stateful firewall.

3. A firewall is installed at the point where the secure internal network and untrusted external network meet which is also known as \_\_\_\_\_

- a) Chock point
- b) Meeting point
- c) Firewall point
- d) Secure point

[View Answer](#)

Answer: a

Explanation: A firewall can be a PC, a router, a midrange, a mainframe, a UNIX workstation, or a combination of these that determines which information or services can be accessed from the outside and who is permitted to use the information and

services from outside. Generally, a firewall is installed at the point where the secure internal network and untrusted external network meet, which is also known as a chokepoint.

4. Which of the following is / are the types of firewall?

- a) Packet Filtering Firewall
- b) Dual Homed Gateway Firewall
- c) Screen Host Firewall
- d) Dual Host Firewall

[View Answer](#)

Answer: a

Explanation: A firewall can be a PC, a midrange, a mainframe, a UNIX workstation, a router, or combination of these. Depending on the requirements, a firewall can consist of one or more of the following functional components: Packet-filtering router

5. A proxy firewall filters at \_\_\_\_\_

- a) Physical layer
- b) Data link layer
- c) Network layer
- d) Application layer

[View Answer](#)

Answer: d

Explanation: The application firewall is typically built to control all network traffic on any layer up to the application layer. It is able to control applications or services specifically, unlike a stateful network firewall, which is – without additional software – unable to control network traffic regarding a specific application. There are two primary categories of application firewalls, network-based application firewalls and host-based application firewalls.

6. A packet filter firewall filters at \_\_\_\_\_

- a) Physical layer
- b) Data link layer
- c) Network layer or Transport layer
- d) Application layer

[View Answer](#)

Answer: c

Explanation: In computing, a firewall is a network security system that monitors and

controls the incoming and outgoing network traffic based on predetermined security rules.[1] A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet, that is assumed not to be secure or trusted.[2] Firewalls are often categorized as either network firewalls or host-based firewalls.

7. What is one advantage of setting up a DMZ with two firewalls?

- a) You can control where traffic goes in three networks
- b) You can do stateful packet filtering
- c) You can do load balancing
- d) Improved network performance

[View Answer](#)

Answer: c

Explanation: DMZ stands for De-Militarized Zone. In a topology with a single firewall serving both internal and external users (LAN and WAN), it acts as a shared resource for these two zones. So load balancing can be done by adding another firewall.

8. What tells a firewall how to reassemble a data stream that has been divided into packets?

- a) The source routing feature
- b) The number in the header's identification field
- c) The destination IP address
- d) The header checksum field in the packet header

[View Answer](#)

Answer: a

Explanation: The source routing feature provides a path address for the packet to help the firewall to reassemble the data stream that was divided into packets. After reassembling, the firewall can then filter the stream.

9. A stateful firewall maintains a \_\_\_\_\_ which is a list of active connections.

- a) Routing table
- b) Bridging table
- c) State table
- d) Connection table

[View Answer](#)

Answer: a

Explanation: The routing table basically gives the state of each connection i.e.

whether the connection is active or not. A routing table ensures the best performance for the stateful firewall.

10. A firewall needs to be \_\_\_\_\_ so that it can grow proportionally with the network that it protects.

- a) Robust
- b) Expansive
- c) Fast
- d) Scalable

[View Answer](#)

Answer: b

Explanation: The firewall has to be expansive because a network is expected to grow with time and if the firewall is unable to grow with it, the firewall won't be able to handle the growing network traffic flow and will hence fail.

Computer Networks Questions & Answers –

Network Management

[« Prev](#)

[Next »](#)

This set of Computer Networks Question Bank focuses on "Network Management".

1. Complex networks today are made up of hundreds and sometimes thousands of

- 
- a) Documents
  - b) Components
  - c) Servers
  - d) Entities

[View Answer](#)

Answer: b

Explanation: Complex networks today are made up of hundreds and sometimes thousands of components. For effective functioning of these thousands of components, good network management is essential.

2. Performance management is closely related to \_\_\_\_\_

- a) Proactive Fault Management
- b) Fault management

- c) Reactive Fault Management
- d) Preventive Fault Management

[View Answer](#)

Answer: b

Explanation: Fault management is really closely related to performance management. It is important to ensure that the network handles faults as effectively as it handles its normal functioning to achieve better performance management.

3. Configuration management can be divided into two subsystems: reconfiguration and \_\_\_\_\_

- a) Documentation
- b) Information
- c) Servers
- d) Entity

[View Answer](#)

Answer: a

Explanation: The documentation subsystem of configuration management handles the log making and reporting functions of the configuration management. It also reports the errors in the network caused by the configuration's failure.

4. In Network Management System, the term that is responsible for controlling access to network based on predefined policy is called \_\_\_\_\_

- a) Fault Management
- b) Secured Management
- c) Active Management
- d) Security Management

[View Answer](#)

Answer: d

Explanation: In Network Management System, the term that is responsible for controlling access to the network based on predefined policy is called security management. The security management ensures authentication, confidentiality and integrity in the network.

5. Control of users' access to network resources through charges is the main responsibility of \_\_\_\_\_

- a) Reactive Fault Management
- b) Reconfigured Fault Management
- c) Accounting Management

d) Security Management

[View Answer](#)

Answer: c

Explanation: Control of users' access to network resources through charges is the main responsibility of accounting management. The accounting management creates a log of the users activity on the network too and goes hand-in-hand with the configurations management.

6. The physical connection between an end point and a switch or between two switches is \_\_\_\_\_

- a) Transmission path
- b) Virtual path
- c) Virtual circuit
- d) Transmission circuit

[View Answer](#)

Answer: a

Explanation: The physical connection between an end point and a switch or between two switches is transmission path. The transmission path is the physical roadway that the packet needs to propagate in order to travel through the network.

7. Which of the following networks supports pipelining effect?

- a) Circuit-switched networks
- b) Message-switched networks
- c) Packet-switched networks
- d) Stream-switched networks

[View Answer](#)

Answer: c

Explanation: Packet switched network is most preferred for pipelining process.

Pipelining exponentially reduces the time taken to transmit a large number of packets in the network.

8. In Network Management System, maps track each piece of hardware and its connection to the \_\_\_\_\_

- a) IP Server
- b) Domain
- c) Network

d) Data

[View Answer](#)

Answer: c

Explanation: Network is the main entity connecting different components in a place. A network map is made to track each component and its connection to the network to ensure better network management.

9. MIB is a collection of groups of objects that can be managed by \_\_\_\_\_

- a) SMTP
- b) UDP
- c) SNMP
- d) TCP/IP

[View Answer](#)

Answer: c

Explanation: MIB stands for Management Information Base. Simple network management controls the group of objects in management information base. It is usually used with SNMP (Simple Network Management Protocol).

10. A network management system can be divided into \_\_\_\_\_

- a) three categories
- b) five broad categories
- c) seven broad categories
- d) ten broad categories

[View Answer](#)

Answer: b

Explanation: The five broad categories of network management are

- Fault Management
- Configuration Management
- Accounting (Administration)
- Performance Management
- Security Management.

Computer Networks Questions & Answers –

Network Utilities

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Network Utilities".

1. Ping can \_\_\_\_\_

- a) Measure round-trip time
- b) Report packet loss
- c) Report latency
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: PING (Packet Internet Groper) command is the best way to test connectivity between two nodes, whether it is Local Area Network (LAN) or Wide Area Network (WAN). Ping uses ICMP (Internet Control Message Protocol) to communicate to other devices.

2. Ping sweep is a part of \_\_\_\_\_

- a) Traceroute
- b) Nmap
- c) Route
- d) Ipconfig

[View Answer](#)

Answer: b

Explanation: A ping sweep is a method that can establish a range of IP addresses which map to live hosts and are mostly used by network scanning tools like nmap. A ping sweep is basically a collective ping command execution on a range of IP addresses.

3. ICMP is used in \_\_\_\_\_

- a) Ping
- b) Traceroute
- c) Ifconfig
- d) Both Ping & Traceroute

[View Answer](#)

Answer: d

Explanation: ICMP stands for Internet Control Message Protocol. ICMP operates over the IP packet to provide error reporting functionality, so in case the node is not active or there is no route, ICMP will be used to report the specific errors for Ping and Traceroute.

4. \_\_\_\_\_ command is used to manipulate TCP/IP routing table.

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: a

Explanation: The route command is used to view and manipulate the TCP/IP routing table in Windows OS. The manipulations done in the routing table with the help of this command will count as static routes.

5. If you want to find the number of routers between a source and destination, the utility to be used is \_\_\_\_\_

- a) route
- b) Ipconfig
- c) Ifconfig
- d) Traceroute

[View Answer](#)

Answer: d

Explanation: Traceroute command is available on Linux OS to find the path i.e. the number of the routers that the packet has to go through to reach the destination. In Windows, Tracert command is used to perform the function.

6. Which of the following is not related to ipconfig in Microsoft Windows?

- a) Display all current TCP/IP network configuration values
- b) Modify DHCP settings
- c) Modify DNS settings
- d) Trace the routers in the path to destination

[View Answer](#)

Answer: d

Explanation: The Tracert command is available on Microsoft Windows to find the path i.e. the number of the routers that the packet has to go through to reach its destination.

7. \_\_\_\_\_ allows checking if a domain is available for registration.

- a) Domain Check
- b) Domain Dossier

- c) Domain Lookup
- d) Domain registers

[View Answer](#)

Answer: a

Explanation: There are billions of domains available for registration on the World Wide Web, and many of them are already registered. So when one wants to register a domain, they need to check whether the domain is available through a domain check.

8. Choose the wrong statement from the following.

- a) Nslookup is used to query a DNS server for DNS data
- b) Ping is used to check connectivity
- c) Pathping combines the functionality of ping with that of route
- d) Ifconfig can configure TCP/IP network interface parameters

[View Answer](#)

Answer: c

Explanation: Pathping combines the functionality of ping with that of traceroute (tracert). The Ping command is used to test connectivity between two nodes and the Tracert/Traceroute command is used to find the path i.e. the number of the routers that the packet has to go through to reach its destination.

Computer Networks Questions & Answers –

Ethernet

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Ethernet”.

1. Ethernet frame consists of \_\_\_\_\_

- a) MAC address
- b) IP address
- c) Default mask
- d) Network address

[View Answer](#)

Answer: a

Explanation: The Ethernet frame has a header that contains the source and destination MAC address. Each MAC address is of 48 bits.

2. What is start frame delimiter (SFD) in ethernet frame?

- a) 10101010
- b) 10101011
- c) 00000000
- d) 11111111

[View Answer](#)

Answer: b

Explanation: The start frame delimiter is a 1 byte field in the Ethernet frame that indicates that the preceding bits are the start of the frame. It is always set to 10101011.

3. MAC address is of \_\_\_\_\_

- a) 24 bits
- b) 36 bits
- c) 42 bits
- d) 48 bits

[View Answer](#)

Answer: d

Explanation: MAC address is like a local address for the NIC that is used to make a local Ethernet (or wifi) network function. It is of 48 bits.

4. What is autonegotiation?

- a) a procedure by which two connected devices choose common transmission parameters
- b) a security algorithm
- c) a routing algorithm
- d) encryption algorithm

[View Answer](#)

Answer: a

Explanation: autonegotiation is a procedure by which two connected devices choose common transmission parameters. It is a signaling mechanism used in Ethernet over Twisted pair cables.

5. Ethernet in metropolitan area network (MAN) can be used as \_\_\_\_\_

- a) pure ethernet

- b) ethernet over SDH
- c) ethernet over MPLS
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: A metropolitan area network (MAN) that is based on Ethernet standards is called an Ethernet MAN. It is commonly used to connect nodes to the Internet. Businesses also use Ethernet MANs to connect their own offices to each other.

6. A point-to-point protocol over ethernet is a network protocol for \_\_\_\_\_

- a) encapsulating PPP frames inside ethernet frames
- b) encapsulating ethernet frames inside PPP frames
- c) for security of ethernet frames
- d) for security of PPP frames

[View Answer](#)

Answer: a

Explanation: PPoE or Point-to-Point protocol over Ethernet was first introduced in 1999. It is popularly used by modern day Internet Service Providers for Dial-up connectivity.

7. High speed ethernet works on \_\_\_\_\_

- a) coaxial cable
- b) twisted pair cable
- c) optical fiber
- d) unshielded twisted pair cable

[View Answer](#)

Answer: c

Explanation: Fast Ethernet is mostly used in networks along with Category 5 (Cat-5) copper twisted-pair cable, but it also works with fiber-optic cable. Based on the cable being used, There can be three types of Fast Ethernet.

8. The maximum size of payload field in ethernet frame is \_\_\_\_\_

- a) 1000 bytes
- b) 1200 bytes
- c) 1300 bytes
- d) 1500 bytes

[View Answer](#)

Answer: d

Explanation: The minimum size of the payload field is 40 bytes and the maximum size is 1500 bytes. If the payload size exceeds 1500 bytes, the frame is called a jumbo frame.

9. What is interframe gap?

- a) idle time between frames
- b) idle time between frame bits
- c) idle time between packets
- d) idle time between networks

[View Answer](#)

Answer: a

Explanation: The inter-frame gap is the idle time for the receiver between the incoming frame flow. The inter-frame gap must be as low as possible for idle connections.

10. An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called \_\_\_\_\_

- a) short frame
- b) runt frame
- c) mini frame
- d) man frame

[View Answer](#)

Answer: b

Explanation: An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called a runt frame. Such frames are a result of collisions or software malfunctions.

[Computer Networks Questions & Answers –](#)

[Wireless LAN](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Wireless LAN".

1. What is the access point (AP) in a wireless LAN?
- a) device that allows wireless devices to connect to a wired network
  - b) wireless devices itself
  - c) both device that allows wireless devices to connect to a wired network and wireless devices itself
  - d) all the nodes in the network

[View Answer](#)

Answer: a

Explanation: Access point in a wireless network is any device that will allow the wireless devices to a wired network. A router is the best example of an Access Point.

2. In wireless ad-hoc network \_\_\_\_\_

- a) access point is not required
- b) access point is must
- c) nodes are not required
- d) all nodes are access points

[View Answer](#)

Answer: a

Explanation: An ad-hoc wireless network is a decentralized kind of a wireless network. An access point is usually a central device and it would go against the rules of the ad-hoc network to use one. Hence it is not required.

3. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA
- c) ALOHA
- d) CSMA/CD

[View Answer](#)

Answer: b

Explanation: CSMA/CA stands for Carrier-sense multiple access/collision avoidance. It is a multiple access protocol used by IEEE 802.11 standard for wireless LAN. It's based on the principle of collision avoidance by using different algorithms to avoid collisions between channels.

4. In wireless distribution system \_\_\_\_\_

- a) multiple access point are inter-connected with each other
- b) there is no access point

- c) only one access point exists
- d) access points are not required

[View Answer](#)

Answer: a

Explanation: A Wireless Distribution System allows the connection of multiple access points together. It is used to expand a wireless network to a larger network.

5. A wireless network interface controller can work in \_\_\_\_\_

- a) infrastructure mode
- b) ad-hoc mode
- c) both infrastructure mode and ad-hoc mode
- d) WDS mode

[View Answer](#)

Answer: c

Explanation: A wireless network interface controller works on the physical layer and the data link layer of the OSI model. Infrastructure mode WNIC needs access point but in ad-hoc mode access point is not required.

6. In wireless network an extended service set is a set of \_\_\_\_\_

- a) connected basic service sets
- b) all stations
- c) all access points
- d) connected access points

[View Answer](#)

Answer: a

Explanation: The extended service set is a part of the IEEE 802.11 WLAN architecture and is used to expand the range of the basic service set by allowing connection of multiple basic service sets.

7. Mostly \_\_\_\_\_ is used in wireless LAN.

- a) time division multiplexing
- b) orthogonal frequency division multiplexing
- c) space division multiplexing
- d) channel division multiplexing

[View Answer](#)

Answer: b

Explanation: In orthogonal frequency division multiplexing, digital data is encoded on multiple carrier frequencies. It is also used in digital television and audio broadcasting in addition to Wireless LANs.

8. Which one of the following event is not possible in wireless LAN?

- a) collision detection
- b) acknowledgement of data frames
- c) multi-mode data transmission
- d) connection to wired networks

[View Answer](#)

Answer: a

Explanation: Collision detection is not possible in wireless LAN with no extensions. Collision detection techniques for multiple access like CSMA/CD are used to detect collisions in Wireless LANs.

9. What is Wired Equivalent Privacy (WEP)?

- a) security algorithm for ethernet
- b) security algorithm for wireless networks
- c) security algorithm for usb communication
- d) security algorithm for emails

[View Answer](#)

Answer: b

Explanation: WEP is a security algorithm for wireless network which intended to provide data confidentiality comparable to that of traditional wired networks. It was introduced in 1997.

10. What is WPA?

- a) wi-fi protected access
- b) wired protected access
- c) wired process access
- d) wi-fi process access

[View Answer](#)

Answer: a

Explanation: WPA or WiFi Protected Access is a security protocol used to provide users and firms with strong data security and protection for their wireless networks (WiFi) to give them confidence that only authorized users can access their network.

## Computer Networks Questions & Answers –

### Internet

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “Internet”.

1. What is internet?

- a) a single network
- b) a vast collection of different networks
- c) interconnection of local area networks
- d) interconnection of wide area networks

[View Answer](#)

Answer: b

Explanation: Internet is nothing but an interconnected computer network providing a variety of communication facilities, consisting of a huge amount of small networks using standardized communication protocols.

2. To join the internet, the computer has to be connected to a \_\_\_\_\_

- a) internet architecture board
- b) internet society
- c) internet service provider
- d) different computer

[View Answer](#)

Answer: c

Explanation: The ISPs (Internet Service Providers) are the main agents through which every computer is connected to the internet. They are licensed to allot public IP addresses to its customers in order to connect them to the internet.

3. Internet access by transmitting digital data over the wires of a local telephone network is provided by \_\_\_\_\_

- a) leased line
- b) digital subscriber line
- c) digital signal line
- d) digital leased line

[View Answer](#)

Answer: b

Explanation: DSL (Digital Subscriber Line) is the technology designed to use the existing telephone lines to transport high-bandwidth data to service subscribers. DSL was used to allow the early users access to the internet and it provides dedicated, point-to-point, public network access.

4. ISP exchanges internet traffic between their networks by \_\_\_\_\_

- a) internet exchange point
- b) subscriber end point
- c) isp end point
- d) internet end point

[View Answer](#)

Answer: a

Explanation: ISPs exchange internet traffic between their networks by using Internet Exchange Points. ISPs and CDNs are connected to each other at these physical locations are they help them provide better service to their customers.

5. Which of the following protocols is used in the internet?

- a) HTTP
- b) DHCP
- c) DNS
- d) DNS, HTTP and DNS

[View Answer](#)

Answer: d

Explanation: HTTP is used to browse all the websites on the World Wide Web, DHCP is used to allot IPs automatically to the users on the internet, and DNS is used to connect the users to the host servers on the internet based on the Domain Name.

6. The size of an IP address in IPv6 is \_\_\_\_\_

- a) 32 bits
- b) 64 bits
- c) 128 bits
- d) 265 bits

[View Answer](#)

Answer: c

Explanation: An IPv6 address is 128 bits long. Therefore, 2<sup>128</sup> i.e. 340 undecillion

addresses are possible in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

7. Internet works on \_\_\_\_\_

- a) packet switching
- b) circuit switching
- c) both packet switching and circuit switching
- d) data switching

[View Answer](#)

Answer: a

Explanation: Packet switching is the method based on which the internet works.

Packet switching features delivery of packets of data between devices over a shared network.

8. Which one of the following is not an application layer protocol used in internet?

- a) remote procedure call
- b) internet relay chat
- c) resource reservation protocol
- d) local procedure call

[View Answer](#)

Answer: c

Explanation: Resource reservation protocol is a transport layer protocol used on the internet. It operates over IPv4 and IPv6 and is designed to reserve resources required by the network layer protocols.

9. Which protocol assigns IP address to the client connected in the internet?

- a) DHCP
- b) IP
- c) RPC
- d) RSVP

[View Answer](#)

Answer: a

Explanation: DHCP stands for Domain Host Control Protocol. It is responsible to remotely assign IP address to the clients connected to the internet. The server that performs this function is called the DHCP server.

10. Which one of the following is not used in media access control?

- a) ethernet

- b) digital subscriber line
- c) fiber distributed data interface
- d) packet switching

[View Answer](#)

Answer: d

Explanation: Packet switching is not really related to media access control as it just features delivery of packets of data between devices over a shared network. Internet is actually based on packet switching.

Computer Networks Questions & Answers –

Bluetooth

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "Bluetooth".

1. An interconnected collection of piconet is called \_\_\_\_\_

- a) scatternet
- b) micronet
- c) mininet
- d) multinet

[View Answer](#)

Answer: a

Explanation: Piconet is the basic unit of a bluetooth system having a master node and upto seven active slave nodes. A collection of piconets is called scatternet and a slave node of a piconet may act as a master in a piconet that is part of the scatternet.

2. In a piconet, there can be up to \_\_\_\_\_ parked nodes in the network.

- a) 63
- b) 127
- c) 255
- d) 511

[View Answer](#)

Answer: c

Explanation: A slave node in a piconet can be instructed by the master node to go into

parked mode. Then the slave node enters the parked mode in which the node is not disconnected from the network but is inactive unless the master wakes it up.

3. Bluetooth is the wireless technology for \_\_\_\_\_

- a) local area network
- b) personal area network
- c) metropolitan area network
- d) wide area network

[View Answer](#)

Answer: b

Explanation: Bluetooth is a wireless technology used to create a wireless personal area network for data transfer up to a distance of 10 meters. It operates on 2.45 GHz frequency band for transmission.

4. Bluetooth uses \_\_\_\_\_

- a) frequency hopping spread spectrum
- b) orthogonal frequency division multiplexing
- c) time division multiplexing
- d) channel division multiplexing

[View Answer](#)

Answer: a

Explanation: Frequency hopping spread spectrum is a method of transmitting radio signals by rapidly changing the carrier frequency and is controlled by the codes known to the sender and receiver only.

5. Unauthorised access of information from a wireless device through a bluetooth connection is called \_\_\_\_\_

- a) bluemaking
- b) bluesnarfing
- c) bluestring
- d) bluescoping

[View Answer](#)

Answer: b

Explanation: Unauthorised access of information from a wireless device through a bluetooth connection is called Bluesnarfing. It is done through exploiting the vulnerabilities of the Bluetooth device to steal the transmitted information.

6. What is A2DP (advanced audio distribution profile)?

- a) a bluetooth profile for streaming audio
- b) a bluetooth profile for streaming video
- c) a bluetooth profile for security
- d) a bluetooth profile for file management

[View Answer](#)

Answer: a

Explanation: A2DP stands for Advanced Audio Distribution Profile is a transfer standard use to transmit high definition audio through Bluetooth. It is mainly used in Bluetooth speakers and wireless headphones.

7. In a piconet, one master device \_\_\_\_\_

- a) can not be slave
- b) can be slave in another piconet
- c) can be slave in the same piconet
- d) can be master in another piconet

[View Answer](#)

Answer: b

Explanation: In a scatternet, a slave node of one piconet may act as a master in a piconet that is part of the scatternet. The scatternet uses this property to connect many piconets together to create a larger network.

8. Bluetooth transceiver devices operate in \_\_\_\_\_ band.

- a) 2.4 GHz ISM
- b) 2.5 GHz ISM
- c) 2.6 GHz ISM
- d) 2.7 GHz ISM

[View Answer](#)

Answer: a

Explanation: Bluetooth operates on 2.45 GHz frequency ISM band for transmission. It is used to create a wireless personal area network for data transfer up to a distance of 10 meters.

9. Bluetooth supports \_\_\_\_\_

- a) point-to-point connections
- b) point-to-multipoint connection
- c) both point-to-point connections and point-to-multipoint connection
- d) multipoint to point connection

[View Answer](#)

Answer: c

Explanation: In Bluetooth, each slave node communicates with the master of the piconet independently i.e. each master-slave connection is independent. The slave is not allowed to communicate with other slaves directly.

10. A scatternet can have maximum \_\_\_\_\_

- a) 10 piconets
- b) 20 piconets
- c) 30 piconets
- d) 40 piconets

[View Answer](#)

Answer: a

Explanation: A scatternet can have maximum of 10 piconets and minimum of 2 piconets. To connect these piconets, a slave node of one piconet may act as a master in a piconet that is part of the scatternet.

Computer Networks Questions & Answers –

WiMAX

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "WiMAX".

1. WiMAX stands for \_\_\_\_\_

- a) wireless maximum communication
- b) worldwide interoperability for microwave access
- c) worldwide international standard for microwave access
- d) wireless internet maximum communication

[View Answer](#)

Answer: b

Explanation: WiMAX or worldwide interoperability for microwave access is a set of wireless communication standards. It provides support for multiple physical layer (PHY) and Media Access Control (MAC) options. It is based on IEEE 802.16 standards.

2. WiMAX provides \_\_\_\_\_

- a) simplex communication
- b) half duplex communication
- c) full duplex communication
- d) no communication

[View Answer](#)

Answer: c

Explanation: WiMax was developed to provide wireless broadband access to buildings. It can also be used to connect WLAN hotspots to the Internet. It is based on IEEE 802.16 standards.

3. WiMAX uses the \_\_\_\_\_

- a) orthogonal frequency division multiplexing
- b) time division multiplexing
- c) space division multiplexing
- d) channel division multiplexing

[View Answer](#)

Answer: a

Explanation: WiMAX physical layer uses orthogonal frequency division multiplexing as it provides simplified reception in multipath and allows WiMAX to operate in NLOS conditions.

4. Which of the following modulation schemes is supported by WiMAX?

- a) binary phase shift keying modulation
- b) quadrature phase shift keying modulation
- c) quadrature amplitude modulation
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: WiMAX supports a variety of modulation schemes such as binary phase shift keying modulation, quadrature phase shift keying modulation, and quadrature amplitude modulation and allows for the scheme to change on a burst-by-burst basis per link, depending on channel conditions.

5. WiMAX MAC layer provides an interface between \_\_\_\_\_

- a) higher transport layers and physical layer
- b) application layer and network layer
- c) data link layer and network layer

d) session layer and application layer

[View Answer](#)

Answer: a

Explanation: WiMAX provides support for multiple physical layer (PHY) on the physical layer and Media Access Control (MAC) options for higher layers to provide wireless broadband access to buildings.

6. For encryption, WiMAX supports \_\_\_\_\_

- a) advanced encryption standard
- b) triple data encryption standard
- c) advanced encryption standard and triple data encryption standard
- d) double data encryption standard

[View Answer](#)

Answer: c

Explanation: Both advanced encryption standard and triple data encryption standard are block cipher techniques and are popularly used in WiMAX and other applications for secure encryption.

7. WiMAX provides \_\_\_\_\_

- a) VoIP services
- b) IPTV services
- c) Both VoIP and IPTV services
- d) no IPTV services

[View Answer](#)

Answer: c

Explanation: IPTV can be transmitted over WiMAX, and relies on packet-switching to offer reliable delivery. VoIP can be operated over a WiMax network with no special hardware or software.

8. Devices that provide the connectivity to a WiMAX network are known as

- 
- a) subscriber stations
  - b) base stations
  - c) gateway
  - d) switch stations

[View Answer](#)

Answer: a

Explanation: Subscriber stations in WiMAX are transceivers (transmitter and receivers). They are used to convert radio signals into digital signals that can be routed to and from communication devices. There is a variety of types of WiMAX subscriber stations like portable PCMCIA cards and fixed stations that provide service to multiple users.

9. WiMAX is mostly used for \_\_\_\_\_

- a) local area network
- b) metropolitan area network
- c) personal area network
- d) wide area network

[View Answer](#)

Answer: b

Explanation: WiMAX provides Wi-Fi connectivity within the home or business for computers and smartphones. WiMAX network operators typically provide a WiMAX Subscriber Unit to do so. The subscriber unit is used to connect to the metropolitan WiMAX network.

10. Which of the following frequencies is not used in WiMAX for communication?

- a) 2.3 GHz
- b) 2.4 GHz
- c) 2.5 GHz
- d) 3.5 GHz

[View Answer](#)

Answer: b

Explanation: The 2.4GHz ISM frequency band is used for personal area network technologies such as Bluetooth and hence is not suitable for WiMAX which is mostly used for Metropolitan Area Networks.

[Computer Networks Questions & Answers –](#)

[SONET](#)

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "SONET".

1. SONET stands for \_\_\_\_\_

- a) synchronous optical network
- b) synchronous operational network
- c) stream optical network
- d) shell operational network

[View Answer](#)

Answer: a

Explanation: SONET stands for synchronous optical network. Frame relay uses SONET to physically transmit data frames over a Frame Relay network as SONET is cheaper and provides better network reliability than other carriers.

2. In SONET, STS-1 level of electrical signalling has the data rate of \_\_\_\_\_

- a) 51.84 Mbps
- b) 155.52 Mbps
- c) 2488.320 Mbps
- d) 622.080 Mbps

[View Answer](#)

Answer: a

Explanation: STS-1 level provides a data rate of 51.84 Mbps, STS-3 provides a data rate of 155.52 Mbps, STS-12 provides a data rate of 622.080 Mbps and STS-48 provides a data rate of 2488.320 Mbps.

3. The path layer of SONET is responsible for the movement of a signal \_\_\_\_\_

- a) from its optical source to its optical destination
- b) across a physical line
- c) across a physical section
- d) back to its optical source

[View Answer](#)

Answer: b

Explanation: The path layer in SONET is responsible for finding the path of the signal across the physical line to reach the optical destination. It is ideally expected to find the shortest and the most reliable path to the destination.

4. The photonic layer of the SONET is similar to the \_\_\_\_\_ of OSI model.

- a) network layer
- b) data link layer
- c) physical layer

d) transport layer

[View Answer](#)

Answer: c

Explanation: The photonic layer in SONET is like the physical layer of the OSI model. It is the lowest layer among the four layers of SONET namely the photonic, the section, the line, and the path layers.

5. In SONET, each synchronous transfer signal STS-n is composed of \_\_\_\_\_

- a) 2000 frames
- b) 4000 frames
- c) 8000 frames
- d) 16000 frames

[View Answer](#)

Answer: c

Explanation: SONET defines the electrical signal as STS-N (Synchronous Transport Signal Level-N) and the optical signal as OC-N (Optical Carrier Level-N). The building block of SONET is the STS-1/OC-1 signal, which is based on an 8-kHz frame rate and operates at 51.84 Mbps.

6. Which one of the following is not true about SONET?

- a) frames of lower rate can be synchronously time-division multiplexed into a higher rate frame
- b) multiplexing is synchronous TDM
- c) all clocks in the network are locked to a master clock
- d) STS-1 provides the data rate of 622.080Mbps

[View Answer](#)

Answer: d

Explanation: In SONET, STS-N stands for Synchronous Transport Signal Level-N. STS-1 level provides the data rate of 51.84 Mbps, and STS-12 provides a data rate of 622.080 Mbps.

7. A linear SONET network can be \_\_\_\_\_

- a) point-to-point
- b) multi-point
- c) both point-to-point and multi-point
- d) single point

[View Answer](#)

Answer: c

Explanation: Synchronous Optical Network (SONET) is basically an optical fiber point-to-point or ring network backbone that provides a way to accommodate additional capacity as the needs of the organization increase to multipoint networks.

8. Automatic protection switching in linear network is defined at the \_\_\_\_\_

- a) line layer
- b) section layer
- c) photonic layer
- d) path layer

[View Answer](#)

Answer: a

Explanation: The Line layer in SONET operates like the data link layer in the OSI model and it is responsible for the movement of signal across a physical line. The Synchronous Transport Signal Mux/Demux and Add/Drop Mux provide the Line layer functions.

9. A unidirectional path switching ring is a network with \_\_\_\_\_

- a) one ring
- b) two rings
- c) three rings
- d) four rings

[View Answer](#)

Answer: b

Explanation: One ring is used as the working ring and other as the protection ring in which each node is connected to its respective adjacent nodes by two fibers, one to transmit, and one to receive.

10. What is SDH?

- a) sdh is similar standard to SONET developed by ITU-T
- b) synchronous digital hierarchy
- c) sdh stands for synchronous digital hierarchy and is a similar standard to SONET developed by ITU-T
- d) none of the mentioned

[View Answer](#)

Answer: c

Explanation: SDH is a standard that allows low bit rates to be combined into high-rate

data streams and as it is synchronous, each individual bit stream can be embedded into and extracted from high-rate data streams easily.

Computer Networks Questions & Answers –

RTP

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “RTP”.

1. Real-time transport protocol (RTP) is mostly used in \_\_\_\_\_

- a) streaming media
- b) video teleconference
- c) television services
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: RTP stands for Real-time transport protocol and is for delivering audio and video over IP networks. Its applications include streaming media, video teleconference, and television services.

2. RTP is used to \_\_\_\_\_

- a) carry the media stream
- b) monitor transmission statistics of streams
- c) monitor quality of service of streams
- d) secure the stream

[View Answer](#)

Answer: a

Explanation: RTP is used to carry the media stream for delivering audio and video over IP networks. Its applications include streaming media, video teleconference, and television services.

3. RTP provides the facility of jitter \_\_\_\_\_

- a) media stream
- b) expansion
- c) media modification

d) security

[View Answer](#)

Answer: a

Explanation: RTP provides the facility of jitter media stream through a jitter buffer which works by reconstructing the sequence of packets on the receiving side. Then an even audio / video stream is generated.

4. Which protocol provides the synchronization between media streams?

a) RTP

b) RTCP

c) RPC

d) RTCT

[View Answer](#)

Answer: b

Explanation: RTCP stands for Real-time Transport Control Protocol and it works with RTP to send control packets to the users of the networks while RTP handles the actual data delivery.

5. An RTP session is established for \_\_\_\_\_

a) each media stream

b) all media streams

c) some predefined number of media streams

d) no media stream

[View Answer](#)

Answer: a

Explanation: An RTP session is required to be established for each media stream for delivering audio and video over the IP network. Each session has independent data transmission.

6. RTP can use \_\_\_\_\_

a) unprivileged UDP ports

b) stream control transmission protocol

c) datagram congestion control protocol

d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: RTP uses unprivileged UDP ports, stream control transmission protocol, and datagram congestion control protocol for data delivery over IP networks.

7. Which one of the following multimedia formats can not be supported by RTP?

- a) MPEG-4
- b) MJPEG
- c) MPEG
- d) TXT

[View Answer](#)

Answer: d

Explanation: RTP is suitable only for multimedia and not for simple text files as the operation would result into wastage of resources. Other protocols like FTP are suitable for such transmissions.

8. An RTP header has a minimum size of \_\_\_\_\_

- a) 12 bytes
- b) 16 bytes
- c) 24 bytes
- d) 32 bytes

[View Answer](#)

Answer: a

Explanation: Each RTP packet has a fixed header of size 12 bytes that contains essential control information like timestamp, payload type etc. for the receiving system processing.

9. Which one of the following is not correct?

- a) RTCP provides canonical end-point identifiers to all session participants
- b) RTCP reports are expected to be sent by all participants
- c) RTCP itself does not provide any flow encryption or authentication methods
- d) RTCP handles the actual data delivery

[View Answer](#)

Answer: d

Explanation: RTCP works with RTP to send control packets to the users of the networks and provide canonical end-point identifiers to all session participants while RTP handles the actual data delivery.

10. Which protocol defines a profile of RTP that provides cryptographic services for the transfer of payload data?

- a) SRTP
- b) RTCP
- c) RCP
- d) RTCT

[View Answer](#)

Answer: a

Explanation: SRTP stands for Secure Real-time Transport Protocol. It is like an extension to RTP which provides stream security through encryption, message authentication and integrity, and replay attack protection.

Computer Networks Questions & Answers –

RPC

[« Prev](#)

[Next »](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on “RPC”.

1. An RPC (remote procedure call) is initiated by the \_\_\_\_\_

- a) server
- b) client
- c) client after the sever
- d) a third party

[View Answer](#)

Answer: b

Explanation: Remote Procedure Call is a method used for constructing distributed, client-server applications based on extending the conventional local procedure calling where the client initiates an RPC to start a connection process.

2. In RPC, while a server is processing the call, the client is blocked \_\_\_\_\_

- a) unless the client sends an asynchronous request to the server
- b) unless the call processing is complete
- c) for the complete duration of the connection
- d) unless the server is disconnected

[View Answer](#)

Answer: a

Explanation: While the server is processing the call i.e. looking through the specifications, the client is blocked, unless the client sends an asynchronous request to the server for another operation.

3. A remote procedure call is \_\_\_\_\_

- a) inter-process communication
- b) a single process
- c) a single thread
- d) a single stream

[View Answer](#)

Answer: a

Explanation: Remote procedure calls is a form of inter-process communication where the client initiates an RPC to start a connection process. It is used to construct distributed, client-server applications.

4. RPC allows a computer program to cause a subroutine to execute in \_\_\_\_\_

- a) its own address space
- b) another address space
- c) both its own address space and another address space
- d) applications address space

[View Answer](#)

Answer: b

Explanation: RPC allows a computer program to cause a subroutine to execute in another address space which is usually the servers address space in a conventional client-server network.

5. RPC works between two processes. These processes must be \_\_\_\_\_

- a) on the same computer
- b) on different computers connected with a network
- c) on the same computer and also on different computers connected with a network
- d) on none of the computers

[View Answer](#)

Answer: c

Explanation: For the operation of RPC between two processes, it is mandatory that the processes are present on the same computer and also on different computers connected with its network.

6. A remote procedure is uniquely identified by \_\_\_\_\_

- a) program number
- b) version number
- c) procedure number
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: Each remote procedure can be uniquely identified by the program number, version number and the procedure number in the networks scope. The identifiers can be used to control the remote procedure by parties involved in the process.

7. An RPC application requires \_\_\_\_\_

- a) specific protocol for client server communication
- b) a client program
- c) a server program
- d) all of the mentioned

[View Answer](#)

Answer: d

Explanation: The RPC technique for constructing distributed, client-server applications based on extending the conventional local procedure calling. It requires a client program, a server program and specific protocol for client server communication to build the system.

8. RPC is used to \_\_\_\_\_

- a) establish a server on remote machine that can respond to queries
- b) retrieve information by calling a query
- c) establish a server on remote machine that can respond to queries and retrieve information by calling a query
- d) to secure the client

[View Answer](#)

Answer: c

Explanation: RPC or Remote Procedure Call is used to establish a server on remote machine that can respond to queries and to retrieve information by calling a query by other computers.

9. RPC is a \_\_\_\_\_

- a) synchronous operation
- b) asynchronous operation

- c) time independent operation
- d) channel specific operation

[View Answer](#)

Answer: a

Explanation: RPC is a synchronous operation where the remote machine works in sync with the other machines to act as a server that can respond to queries called by the other machines.

10. The local operating system on the server machine passes the incoming packets to the \_\_\_\_\_

- a) server stub
- b) client stub
- c) client operating system
- d) client process

[View Answer](#)

Answer: a

Explanation: The local operating system on the server machine passes the incoming packets to the server stub which then processes the packets which contain the queries from the client machines for retrieving information.

Computer Networks Questions & Answers –

Intrusion Detection Systems

[« Prev](#)

[Next »](#)

This set of Computer Networks Questions and Answers for Entrance exams focuses on “Intrusion Detection Systems”.

1. Which of the following is an advantage of anomaly detection?

- a) Rules are easy to define
- b) Custom protocols can be easily analyzed
- c) The engine can scale as the rule set grows
- d) Malicious activity that falls within normal usage patterns is detected

[View Answer](#)

Answer: c

Explanation: Once a protocol has been built and a behavior defined, the engine can

scale more quickly and easily than the signature-based model because a new signature does not have to be created for every attack and potential variant.

2. A false positive can be defined as \_\_\_\_\_

- a) An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior
- b) An alert that indicates nefarious activity on a system that is not running on the network
- c) The lack of an alert for nefarious activity
- d) Both An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior and An alert that indicates nefarious activity on a system that is not running on the network

[View Answer](#)

Answer: d

Explanation: A false positive is any alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior.

3. One of the most obvious places to put an IDS sensor is near the firewall. Where exactly in relation to the firewall is the most productive placement?

- a) Inside the firewall
- b) Outside the firewall
- c) Both inside and outside the firewall
- d) Neither inside the firewall nor outside the firewall.

[View Answer](#)

Answer: a

Explanation: There are legitimate political, budgetary and research reasons to want to see all the “attacks” against your connection, but given the care and feeding any IDS requires, do yourself a favor and keep your NIDS sensors on the inside of the firewall.

4. What is the purpose of a shadow honeypot?

- a) To flag attacks against known vulnerabilities
- b) To help reduce false positives in a signature-based IDS
- c) To randomly check suspicious traffic identified by an anomaly detection system
- d) To enhance the accuracy of a traditional honeypot

[View Answer](#)

Answer: c

Explanation: “Shadow honeypots,” as researchers call them, share all the same

characteristics of protected applications running on both the server and client side of a network and operate in conjunction with an ADS.

5. At which two traffic layers do most commercial IDSES generate signatures?

- a) Application layer and Network layer
- b) Network layer and Session Layer
- c) Transport layer and Application layer
- d) Transport layer and Network layer

[View Answer](#)

Answer: d

Explanation: Most commercial IDSES generate signatures at the network and transport layers. These signatures are used to ensure that no malicious operation is contained in the traffic. Nemean generates signature at application and session layer.

6. IDS follows a two-step process consisting of a passive component and an active component. Which of the following is part of the active component?

- a) Inspection of password files to detect inadvisable passwords
- b) Mechanisms put in place to reenact known methods of attack and record system responses
- c) Inspection of system to detect policy violations
- d) Inspection of configuration files to detect inadvisable settings

[View Answer](#)

Answer: b

Explanation: Secondary components of mechanism are set in place to reenact known methods of attack and to record system responses. In passive components, the system I designed just to record the system's responses in case of an intrusion.

7. When discussing IDS/IPS, what is a signature?

- a) An electronic signature used to authenticate the identity of a user on the network
- b) Attack-definition file
- c) It refers to "normal," baseline network behavior
- d) It is used to authorize the users on a network

[View Answer](#)

Answer: b

Explanation: IDSES work in a manner similar to modern antivirus technology. They are constantly updated with attack-definition files (signatures) that describe each type

of known malicious activity. Nemean is a popular signature generation method for conventional computer networks.

8. "Semantics-aware" signatures automatically generated by Nemean are based on traffic at which two layers?

- a) Application layer and Transport layer
- b) Network layer and Application layer
- c) Session layer and Transport layer
- d) Application layer and Session layer

[View Answer](#)

Answer: d

Explanation: Nemean automatically generates "semantics-aware" signatures based on traffic at the session and application layers. These signatures are used to ensure that no malicious operation is contained in the traffic.

9. Which of the following is used to provide a baseline measure for comparison of IDSes?

- a) Crossover error rate
- b) False negative rate
- c) False positive rate
- d) Bit error rate

[View Answer](#)

Answer: a

Explanation: As the sensitivity of systems may cause the false positive/negative rates to vary, it's critical to have some common measure that may be applied across the board.

10. Which of the following is true of signature-based IDSes?

- a) They alert administrators to deviations from "normal" traffic behavior
- b) They identify previously unknown attacks
- c) The technology is mature and reliable enough to use on production networks
- d) They scan network traffic or packets to identify matches with attack-definition files

[View Answer](#)

Answer: d

Explanation: They are constantly updated with attack-definition files (signatures) that describe each type of known malicious activity. They then scan network traffic for packets that match the signatures, and then raise alerts to security administrators.

## Computer Networks Questions & Answers –

PPP

« Prev

Next »

This set of Basic Computer Networks Questions and Answers focuses on "PPP".

1. Both HDLC and PPP are Data link layer protocols.

a) True

b) False

[View Answer](#)

Answer: a

Explanation: Both HDLC and PPP both are Data link layer protocol. HDLC stands for High level Data Link Control and PPP stands for Point to Point Protocol.

2. Which protocol does the PPP protocol provide for handling the capabilities of the connection/link on the network?

a) LCP

b) NCP

c) Both LCP and NCP

d) TCP

[View Answer](#)

Answer: c

Explanation: LCP stands for Link Control Protocol and NCP stands for Network Control Protocol. LCP and NCP are the PPP protocols which provide interface for handling the capabilities of the connection/link on the network.

3. The PPP protocol \_\_\_\_\_

a) Is designed for simple links which transport packets between two peers

b) Is one of the protocols for making an Internet connection over a phone line

c) Is designed for simple links which transport packets between two peers and making an Internet connection over a phone line

d) Is used for sharing bandwidth

[View Answer](#)

Answer: c

Explanation: The PPP protocol is designed for handling simple links which transport

packets between two peers. It is a standard protocol that is used to make an Internet connection over phone lines.

4. PPP provides the \_\_\_\_\_ layer in the TCP/IP suite.

- a) Link
- b) Network
- c) Transport
- d) Application

[View Answer](#)

Answer: a

Explanation: PPP provides function of the link layer in the TCP/IP suite. It focuses on the link between two nodes that is going to be used by the users to communicate. It can use pre-installed phone line for the purpose.

5. PPP consists of \_\_\_\_\_ components

- a) Three (encapsulating, the Domain Name system)
- b) Three (encapsulating, a link control protocol, NCP)
- c) Two (a link control protocol, Simple Network Control protocol)
- d) One (Simple Network Control protocol)

[View Answer](#)

Answer: b

Explanation: PPP consists of three components namely Link Control Protocol (LCP), Network Control Protocol (NCP), and Encapsulation. LCP and NCP are the PPP protocols which provide interface for handling the capabilities of the connection/link on the network and encapsulation provides for multiplexing of different network-layer protocols.

6. The PPP encapsulation \_\_\_\_\_

- a) Provides for multiplexing of different network-layer protocols
- b) Requires framing to indicate the beginning and end of the encapsulation
- c) Establishing, configuring and testing the data-link connection
- d) Provides interface for handling the capabilities of the connection/link on the network

[View Answer](#)

Answer: a

Explanation: Encapsulation is a part of PPP which provides means for multiplexing of

different network-layer protocols. The other two parts of PPP are Link Control Protocol and Network Control Protocol.

7. A Link Control Protocol (LCP) is used for \_\_\_\_\_

- a) Establishing, configuring and testing the data-link connection
- b) Establishing and configuring different network-layer protocols
- c) Testing the different network-layer protocols
- d) Provides for multiplexing of different network-layer protocols

[View Answer](#)

Answer: a

Explanation: The Link Control Protocol (LCP) is the part of PPP that is used for establishing, configuring and testing the data-link connection. The other two components are Network Control Protocol and Encapsulation.

8. A family of network control protocols (NCPs) \_\_\_\_\_

- a) Are a series of independently defined protocols that provide a dynamic
- b) Are a series of independently-defined protocols that encapsulate
- c) Are a series of independently defined protocols that provide transparent
- d) The same as NFS

[View Answer](#)

Answer: b

Explanation: The family of network control protocols (NCPs) is a series of independently-defined protocols that encapsulate the data flowing between the two nodes. It provides means for the network nodes to control the link traffic.

9. Choose the correct statement from the following.

- a) PPP can terminate the link at any time
- b) PPP can terminate the link only during the link establishment phase
- c) PPP can terminate the link during the authentication phase
- d) PPP can terminate the link during the callback control phase

[View Answer](#)

Answer: a

Explanation: PPP allows termination of the link at any time in any phase because it works on the data link layer which is the layer in control of the link of the communication.

10. The link necessarily begins and ends with this phase. During the \_\_\_\_\_ phase, the LCP automata will be in INITIAL or STARTING states.

- a) Link-termination phase
- b) Link establishment phase
- c) Authentication phase
- d) Link dead phase

[View Answer](#)

Answer: d

Explanation: The link necessarily begins and ends with the link dead phase. During this phase, the LCP automata will be in the initial or its final state. The link is nonfunctioning or inactive during the link dead phase.

Computer Networks Questions & Answers –

EIGRP

[« Prev](#)

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "EIGRP".

1. EIGRP is a routing protocol design by Cisco.

- a) True
- b) False

[View Answer](#)

Answer: a

Explanation: EIGRP stands for Enhanced Interior Gateway Routing Protocol is a routing protocol designed by Cisco. It is available only on Cisco routers.

2. EIGRP metric is \_\_\_\_\_

- a) K-values
- b) Bandwidth only
- c) Hop Count
- d) Delay only

[View Answer](#)

Answer: a

Explanation: EIGRP metric is K-values which are integers from 0 to 128. They are used to calculate the overall EIGRP cost with bandwidth and delay metrics.

3. EIGRP can support \_\_\_\_\_

- a) VLSM/subnetting
- b) Auto summary
- c) Unequal cost load balancing
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: EIGRP supports variable and fixed length subnetting, Auto summary, and Unequal cost load balancing to provide efficient routing functionality on Cisco routers.

4. EIGRP sends a hello message after every \_\_\_\_\_ seconds.

- a) 5 seconds (LAN), 60 seconds (WAN)
- b) 5 seconds (LAN), 5 seconds (WAN)
- c) 15s
- d) 180s

[View Answer](#)

Answer: a

Explanation: EIGRP routers broadcast the hello packets frequently to familiarize with the neighbors. EIGRP routers send the hello message after every 5 seconds on LAN, and every 60 seconds on WAN.

5. Administrative distance for internal EIGRP is \_\_\_\_\_

- a) 90
- b) 170
- c) 110
- d) 91

[View Answer](#)

Answer: a

Explanation: Routers use the metric of administrative distance to select the best path when there are different routes to the same destination from two different routing protocols as it is a measure of reliability of routing protocols. Administrative distance for internal EIGRP is 90.

6. The EIGRP metric values include:

- a) Delay
- b) Bandwidth

- c) MTU
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: The EIGRP metric values are Delay, Bandwidth, and MTU. MTU stands for Maximum Transmission Unit. They are combined together to give the overall EIGRP cost in K-values.

7. For default gateway, which of following commands will you use on a Cisco router?

- a) IP default network
- b) IP default gateway
- c) IP default route
- d) Default network

[View Answer](#)

Answer: a

Explanation: IP default network command is used to find the default gateway in Cisco router. If the router finds routes to the node, it considers the routes to that node for installation as the gateway to it.

8. Administrative distance for external EIGRP route is \_\_\_\_\_

- a) 90
- b) 170
- c) 110
- d) 100

[View Answer](#)

Answer: b

Explanation: Routers use the metric of administrative distance to select the best path when there are different routes to the same destination from two different routing protocols as it is a measure of reliability of routing protocols. Administrative distance for external EIGRP is 170.

9. EIGRP uses the \_\_\_\_\_ algorithm for finding shortest path.

- a) SPF
- b) DUAL
- c) Linkstat
- d) Djikstra's

[View Answer](#)

Answer: b

Explanation: EIGRP uses the DUAL algorithm for finding shortest path. DUAL stands for diffusing update algorithm and it is used to prevent routing loops by recalculating routes globally.

10. In EIGRP best path is known as the successor, where as backup path is known as

- 
- a) Feasible successor
  - b) Back-up route
  - c) Default route
  - d) There is no backup route in EIGRP

[View Answer](#)

Answer: a

Explanation: Feasible successor is the backup path. The backup path is used alternatively used whenever the best path fails. It is not used primarily because it is comparatively expensive than the best path.

Seat No -

Total number of questions : 60

## 10555\_COMPUTER NETWORKS AND SECURITY

Time : 1hr

Max Marks : 50

N.B

- 1) All questions are Multiple Choice Questions having single correct option.
  - 2) Attempt any 50 questions out of 60.
  - 3) Use of calculator is allowed.
  - 4) Each question carries 1 Mark.
  - 5) Specially abled students are allowed 20 minutes extra for examination.
  - 6) Do not use pencils to darken answer.
  - 7) Use only black/blue ball point pen to darken the appropriate circle.
  - 8) No change will be allowed once the answer is marked on OMR Sheet.
  - 9) Rough work shall not be done on OMR sheet or on question paper.
  - 10) Darken ONLY ONE CIRCLE for each answer.
- 

**Q.no 1. CRC stands for \_\_\_\_\_****A : Cyclic redundancy check**

B : Code repeat check

C : Code redundancy check

D :

**Q.no 2. High speed ethernet works on**

A : coaxial cable

B : twisted pair cable

**C : optical fiber**

D :

**Q.no 3. Line –of- sight propagation is done by**

A : MEO Satellites

B : GEO Satellites

C : LEO Satellites

D :

**Q.no 4. In wireless network an extended service set is a set of**

A : Connected basic service sets

B : All stations

C : All access points

D :

**Q.no 5. Link state packets are built in \_\_\_\_\_**

A : Shortest path first

B : Distance vector

C : Link state routing

D :

**Q.no 6. Which of the following is developing Complementary Code Keying-OFDM?**

A : IEEE 802.11a

B : IEEE 802.11b

C : IEEE 802.15.4

D : IEEE 802.11g

**Q.no 7. WAN stands for \_\_\_\_\_**

A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 8. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_**

A : Physical signaling sub layer

B : Physical data sub layer

C : Physical address sub layer

D : Physical transport sub layer

**Q.no 9. A \_\_\_\_\_ operates in both the physical and the data link layer.**

A : Router

**B : Bridge**

C : Repeater

D :

**Q.no 10. To connect networks of similar protocols \_\_\_\_\_ are used.**

A : Routers

**B : Bridges**

C : Gateways

D :

**Q.no 11. A device that connects to a network without the use of cables is said to be**

A : Distributed

B : Centralized

**C : Wireless**

D :

**Q.no 12. Which network topology requires a central controller or hub?**

**A : Star**

B : Mesh

C : Ring

D : Bus

**Q.no 13. The physical layer is concerned with \_\_\_\_\_**

**A : Bit-by-Bit delivery**

B : Process to Process delivery

C : Application to application delivery

D :

**Q.no 14. A point-to-point protocol over Ethernet is a network protocol for**

A : Encapsulating PPP frames inside Ethernet frames

B : Encapsulating Ethernet frames inside PPP frames

C : For security of Ethernet frames

D :

**Q.no 15. Frame relay has \_\_\_\_\_**

A : Only physical layer

B : Only data link layer

C : Only network layer

D : Both physical and data link layer

**Q.no 16. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

D :

**Q.no 17. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 18. In which routing method do all the routers have a common database?**

A : Distance vector

B : Link vector

C : Shortest path

D : Link state

**Q.no 19. In link state routing after the construction of link state packets new routes are computed using \_\_\_\_\_**

A : Bellman Ford algorithm

B : DES algorithm

C : Dijkstra's algorithm

D :

**Q.no 20. Count-to -Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

B : short path first

C : Link state routing

D :

**Q.no 21. A \_\_\_\_\_ typically connects personal computers within a very limited geographical area, usually within a single building.**

A:LAN

B:WAN

C:MAN

D :

**Q.no 22. A backbone is usually a \_\_\_\_\_.**

A : Star

B : Bus

C : Star OR Bus

D :

**Q.no 23. Frames from one LAN can be transmitted to another LAN via the device**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 24. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 25. Routers operate at which layer of the OSI model?**

A : Physical

B : Transport

C : Network

D :

**Q.no 26. Which one of the following algorithm is not used for congestion control?**

A : Traffic aware routing

B : Admission control

C : Load shedding

D : Routing information protocol

**Q.no 27. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

A : Digital modulation

B : Amplitude modulation

C : Frequency modulation

D : Phase modulation

**Q.no 28. Bridge works in which layer of the OSI model**

A : Application layer

B : A. Transport layer

C : Network layer

D : Data link layer

**Q.no 29. TCP and UDP are called \_\_\_\_\_**

A : Application protocols

B : Session protocols

**C : Transport protocols**

D :

**Q.no 30. What device separates a single network into two segments but lets the two segments appear as one to higher protocols?**

A : Switch

B : Router

**C : Bridge**

D :

**Q.no 31. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.**

A : Stack

**B : Queue**

C : Hash

D :

**Q.no 32. Galileo satellite is \_\_\_\_.**

**A : Medium Earth Orbit (MEO)**

B : Low Earth Orbit (LEO)

C : Geosynchronous Earth Orbit (GEO)

D : Highly Elliptical Orbit (HEO)

**Q.no 33. A subset of a network that includes all the routers but contains no loops is called \_\_\_\_\_**

**A : Spanning tree**

B : Spider structure

C : Spider tree

D :

**Q.no 34. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client**

A : IP Address

B : MAAC Address

C : PORT Address

D :

**Q.no 35. VLANs can\_\_\_\_\_**

A : Provide an extra measure of security

B : Reduce network traffic

C : either (1) or (2)

D : both (1) and (2)

**Q.no 36. Mostly ----is used in wireless LAN**

A : Time division multiplexing

B : Orthogonal frequency division multiplexing

C : Space division multiplexing

D :

**Q.no 37. Framing is done by**

A : Application layer

B : Transport layer

C : Network layer

D : Data link layer

**Q.no 38. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

B : Gateway

C : Bridge

D : Hub

**Q.no 39. Which one of the following is not a function of network layer**

A : Inter-networking

B : Congestion control

C : Routing

**D : Framing**

**Q.no 40. Which address is used in an internet employing the TCP/IP protocols?**

A : physical address and logical address

B : port address

C : specific address

**D : all of the mentioned**

**Q.no 41. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

**A : FHSS and DSSS**

B : THSS and FHSS

C : THSS and DSSS

D :

**Q.no 42. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

**A : CSMA/CD**

B : CSMA/CA

C : either (1) or (2)

D : both (1) and (2)

**Q.no 43. What does protocol defines?**

A : Protocol defines what data is communicated.

B : Protocol defines how data is communicated.

C : Protocol defines when data is communicated.

D : D. All of above

**Q.no 44. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.**

A : Network layer

B : Physical layer

C : Transport layer

D :

**Q.no 45. What is NIC used for?**

A : Consists IP Address

B : Consists MAAC Address

C : Consists PORT Address

D :

**Q.no 46. Which one of the following event is not possible in wireless LAN.**

A : Collision detection

B : Acknowledgement of data frames

C : Multi-mode data transmission

D :

**Q.no 47. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_.**

A : Protocol stack

B : Protocol architecture

C : Protocol suite

D :

**Q.no 48. Which of the following tasks is not done by data link layer?**

A : Framing

B : Error control

C : Flow control

D : Channel coding

**Q.no 49. Which transmission media provides the highest transmission speed in a network?**

A : Coaxial cable

B : Twisted pair cable

C : Optical fiber

D : Electrical cable

**Q.no 50. In \_\_\_\_\_ methods, a station cannot send unless it has been authorized by other stations**

A : Controlled access

B : Channelization

C : Random access

D :

**Q.no 51. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.**

A : bridge

B : firewall

C : router

D :

**Q.no 52. Multiplexing is used in \_\_\_\_\_**

A : Packet switching

B : Circuit switching

C : Data switching

D : Packet & Circuit switching

**Q.no 53. Using which method in transport layer data integrity can be ensured?**

A : Checksum

B : Repetition codes

C : Cyclic redundancy checks

D :

**Q.no 54. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

A : Full duplexing

**B : Multiplexing**

C : Microplexing

D :

**Q.no 55. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**

A : Control Variables

**B : Sender Sliding Window**

C : Receiver Sliding Window

D :

**Q.no 56. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

**D : Packet switching and Circuit switching**

**Q.no 57. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

A : Go-Back-N ARQ

**B : Selective Repeat ARQ**

C : Stop-and-Wait ARQ

D :

**Q.no 58. Buffer overrun can be reduced by using what?**

A : Traffic control

**B : Flow control**

C : Byte orientation

D :

**Q.no 59. Automatic repeat request error management mechanism is provided by**

A : Logical link control sublayer

B : Media access control sublayer

C : Network interface control sublayer

D :

**Q.no 60. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

A : two times

B : three times

C : the same as

D :

**Q.no 1. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

B : Star network

C : Ring network

D :

**Q.no 2. How many layers are in the TCP/IP model?**

A : 4 layers

B : 5 layers

C : 6 layers

D : 7 layers

**Q.no 3. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

D : Stop and forward

**Q.no 4. Data communication system within a building or campus is \_\_\_\_\_**

A:LAN

B:WAN

C:MAN

D:PAN

**Q.no 5. Frame relay has error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

D :

**Q.no 6. Transmission control protocol \_\_\_\_\_**

A : Is a connection-oriented protocol

B : Connection Less networks

C : Virtual Connection

D :

**Q.no 7. Adding 1 and 1 in modulo-2 arithmetic results in**

A : 0

B : 1

C : 2

D :

**Q.no 8. What is the access point (AP) in wireless LAN?**

A : Device that allows wireless devices to connect to a wired network

B : Wireless devices itself

C : Both 1 and 2

D :

**Q.no 9. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

**B : IEEE 802.11**

C : IEEE 802.2

D :

**Q.no 10. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 11. Which of the following is a transport layer protocol?**

A : Stream control transmission protocol

B : Internet control message protocol

C : Neighbor discovery protocol

D :

**Q.no 12. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A:TCP

B:IP

C:UDP

D:ARP

**Q.no 13. In \_\_\_\_\_ each station sends a frame whenever it has a frame to send.**

A : Slotted ALOHA

**B : Pure ALOHA**

C : Selective ALOHA

D :

**Q.no 14. Bridge works in which layer of the OSI model?**

- A : Appliation layer
- B : Transport layer
- C : Network layer
- D : D. Datalink layer**

**Q.no 15. Coaxial cable consists of --- concentric copper conductors**

- A : One
- B : Two**
- C : Three
- D :

**Q.no 16. To connect networks of similar protocols \_\_\_\_\_ are used.**

- A : Routers
- B : Bridges**
- C : Gateways
- D :

**Q.no 17. A \_\_\_\_\_ operates in both the physical and the data link layer.**

- A : Router
- B : Bridge**
- C : Repeater
- D :

**Q.no 18. Which network topology requires a central controller or hub?**

- A : Star**
- B : Mesh
- C : Ring
- D : Bus

**Q.no 19. A point-to-point protocol over Ethernet is a network protocol for**

A : Encapsulating PPP frames inside Ethernet frames

B : Encapsulating Ethernet frames inside PPP frames

C : For security of Ethernet frames

D :

**Q.no 20. CRC stands for \_\_\_\_\_**

A : Cyclic redundancy check

B : Code repeat check

C : Code redundancy check

D :

**Q.no 21. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

D :

**Q.no 22. A \_\_\_\_\_ typically connects personal computers within a very limited geographical area, usually within a single building.**

A:LAN

B:WAN

C:MAN

D :

**Q.no 23. Frame relay has \_\_\_\_\_**

A : Only physical layer

B : Only data link layer

C : Only network layer

D : Both physical and data link layer

**Q.no 24. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 25. The physical layer is concerned with \_\_\_\_\_**

A : Bit-by-Bit delivery

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**Q.no 26. A \_\_\_\_\_ LAN allows several LANs to be connected**

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C : Backbone

D :

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A : Application layer

B : Session layer

C : Transport layer

D : data layer

**Q.no 30. Geostationary satellites \_\_\_\_\_**

A : Are placed at a fixed point above the earth

B : Rotate the earth about a fixed axis

C : Rotate the earth about a varying axis

D :

**Q.no 31. Datagram networks mainly refers to \_\_\_\_\_**

A : Connection oriented networks

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A:DSL

B : FTPP

C : HTTP

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**Q.no 37. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

C : IEEE 802.11

D : IEEE 802.15

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A : Seconds

B : Frames

C : Packets

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D :

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C : Frequency modulation

D : Phase modulation

**Q.no 45. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

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B : Protocol architecture

C : Protocol suite

D :

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B : Error control

C : Flow control

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B : Physical wiring

C : Software

D :

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B : 48 bit

C : 16 bit

D :

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B : Session layer

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B : Circuit switching and Line switching

C : Line switching and bit switching

**D : Packet switching and Circuit switching**

**Q.no 58. Multiplexing is used in \_\_\_\_\_**

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**B : Circuit switching**

C : Data switching

D : Packet & Circuit switching

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D :

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C : Network interface control sublayer

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C : LEO Satellites

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**Q.no 2. Coaxial cable consists of --- concentric copper conductors**

A : 1

**B : 2**

C : 3

D :

**Q.no 3. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

**B : Star network**

C : Ring network

D :

**Q.no 4. Routers operate at which layer of the OSI model?**

A : Physical

B : Transport

C : Network

D :

**Q.no 5. In link state routing after the construction of link state packets new routes are computed using \_\_\_\_\_**

A : Bellman Ford algorithm

B : DES algorithm

**C : Dijkstra's algorithm**

D :

**Q.no 6. A device that connects to a network without the use of cables is said to be**

A : Distributed

B : Centralized

**C : Wireless**

D :

**Q.no 7. In which routing method do all the routers have a common database?**

A : Distance vector

B : Link vector

C : Shortest path

**D : Link state**

**Q.no 8. Count-to -Infinity problem occurs in \_\_\_\_\_**

**A : Distance vector routing**

B : short path first

C : Link state routing

D :

**Q.no 9. Link state packets are built in \_\_\_\_\_**

A : Shortest path first

B : Distance vector

C : Link state routing

D :

**Q.no 10. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

D : Stop and forward

**Q.no 11. Which of the following is developing Complementary Code Keying-OFDM?**

A : IEEE 802.11a

B : IEEE 802.11b

C : IEEE 802.15.4

D : IEEE 802.11g

**Q.no 12. How many layers are in the TCP/IP model?**

A : 4 layers

B : 5 layers

C : 6 layers

D : 7 layers

**Q.no 13. Frames from one LAN can be transmitted to another LAN via the device**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 14. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_**

A : Physical signaling sub layer

B : Physical data sub layer

C : Physical address sub layer

D : Physical transport sub layer

**Q.no 15. In wireless network an extended service set is a set of**

A : Connected basic service sets

B : All stations

C : All access points

D :

**Q.no 16. High speed ethernet works on**

A : coaxial cable

B : twisted pair cable

C : optical fiber

D :

**Q.no 17. A backbone is usually a \_\_\_\_\_.**

A : Star

B : Bus

C : Star OR Bus

D :

**Q.no 18. WAN stands for \_\_\_\_\_**

A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 19. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 20. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A:TCP

B:IP

C:UDP

D:ARP

**Q.no 21. Data communication system within a building or campus is\_\_\_\_\_**

A:LAN

B:WAN

C:MAN

D:PAN

**Q.no 22. Adding 1 and 1 in modulo-2 arithmetic results in**

A : 0

B : 1

C : 2

D :

**Q.no 23. A \_\_\_\_\_ operates in both the physical and the data link layer.**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 24. In \_\_\_\_\_ each station sends a frame whenever it has a frame to send.**

A : Slotted ALOHA

B : Pure ALOHA

C : Selective ALOHA

D :

**Q.no 25. Coaxial cable consists of --- concentric copper conductors**

A : One

**B : Two**

C : Three

D :

**Q.no 26. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client**

**A : IP Address**

B : MAAC Address

C : PORT Address

D :

**Q.no 27. Geostationary satellites \_\_\_\_\_**

**A : Are placed at a fixed point above the earth**

B : Rotate the earth about a fixed axis

C : Rotate the earth about a varying axis

D :

**Q.no 28. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.**

**A : Network layer**

B : Physical layer

C : Transport layer

D :

**Q.no 29. TCP and UDP are called \_\_\_\_\_**

A : Application protocols

B : Session protocols

**C : Transport protocols**

D :

**Q.no 30. Frame relay provides error detection at the \_\_\_\_\_**

A : Physical layer

**B : Data link layer**

C : Network layer

D : Transport layer

**Q.no 31. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

**B : Gateway**

C : Bridge

D : Hub

**Q.no 32. Mostly ----is used in wireless LAN**

A : Time division multiplexing

**B : Orthogonal frequency division multiplexing**

C : Space division multiplexing

D :

**Q.no 33. Framing is done by**

A : Application layer

B : Transport layer

C : Network layer

**D : Data link layer**

**Q.no 34. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

**A : FHSS and DSSS**

B : THSS and FHSS

C : THSS and DSSS

D :

**Q.no 35. What device separates a single network into two segments but lets the two segments appear as one to higher protocols?**

A : Switch

B : Router

**C : Bridge**

D :

**Q.no 36. Which of the following is not correct in relation to multi-destination routing?**

A : Is same as broadcast routing

B : Contains the list of all destinations

**C : Data is not sent by packets**

D :

**Q.no 37. A \_\_\_\_\_ LAN allows several LANs to be connected**

A : Wired

B : Wireless

**C : Backbone**

D :

**Q.no 38. What does protocol defines?**

A : Protocol defines what data is communicated.

B : Protocol defines how data is communicated.

C : Protocol defines when data is communicated.

**D : D. All of above**

**Q.no 39. Galileo satellite is \_\_\_\_.**

**A : Medium Earth Orbit (MEO)**

B : Low Earth Orbit (LEO)

C : Geosynchronous Earth Orbit (GEO)

D : Highly Elliptical Orbit (HEO)

**Q.no 40. Which transmission media provides the highest transmission speed in a network?**

A : Coaxial cable

B : Twisted pair cable

C : Optical fiber

D : Electrical cable

**Q.no 41. What is NIC used for?**

A : Consists IP Address

B : Consists MAAC Address

C : Consists PORT Address

D :

**Q.no 42. Datagram networks mainly refers to \_\_\_\_\_**

A : Connection oriented networks

B : Connection less networks

C : Telephone networks

D :

**Q.no 43. What does Router do in a network?**

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**Q.no 44. In asynchronous serial communication the physical layer provides \_\_\_\_\_**

A : Start and Stop Signaling

B : Flow control

C : Both start & stop signaling and flow control

D :

**Q.no 45. Which address is used in an internet employing the TCP/IP protocols?**

A : physical address and logical address

B : port address

C : specific address

D : all of the mentioned

**Q.no 46. Delimiting and synchronization of data exchange is provided by**

A : Application layer

**B : Session layer**

C : Transport layer

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A : Stack

**B : Queue**

C : Hash

D :

**Q.no 51. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

**C : Software**

D :

**Q.no 52. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**

A : Control Variables

**B : Sender Sliding Window**

C : Receiver Sliding Window

D :

**Q.no 53. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?**

A : Only when no error occurs at the transmission level

**B : When retransmission of old packet in a novel frame is necessary**

C : Only when station B receives frame with errors

D :

**Q.no 54. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

**A : two times**

B : three times

C : the same as

D :

**Q.no 55. Using which method in transport layer data integrity can be ensured?**

A : Checksum

B : Repetition codes

C : Cyclic redundancy checks

D :

**Q.no 56. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

A : Full duplexing

B : Multiplexing

C : Microplexing

D :

**Q.no 57. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.**

A : bridge

B : firewall

C : router

D :

**Q.no 58. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

A : 32 bit

B : 48 bit

C : 16 bit

D :

**Q.no 59. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

A : Go-Back-N ARQ

B : Selective Repeat ARQ

C : Stop-and-Wait ARQ

D :

**Q.no 60. Buffer overrun can be reduced by using what?**

A : Traffic control

**B : Flow control**

C : Byte orientation

D :

**Q.no 1. A \_\_\_\_\_ typically connects personal computers within a very limited geographical area, usually within a single building.****A:LAN**

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D :

**Q.no 2. CRC stands for \_\_\_\_\_****A : Cyclic redundancy check**

B : Code repeat check

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D :

**Q.no 3. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

**B : IEEE 802.11**

C : IEEE 802.2

D :

**Q.no 4. Frame relay has \_\_\_\_\_**

A : Only physical layer

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C : Only network layer

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A : Port

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C : Node

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**Q.no 6. Which of the following is a transport layer protocol?**

A : Stream control transmission protocol

B : Internet control message protocol

C : Neighbor discovery protocol

D :

**Q.no 7. Transmission control protocol \_\_\_\_\_**

A : Is a connection-oriented protocol

B : Connection Less networks

C : Virtual Connection

D :

**Q.no 8. How many layers does OSI Reference Model has?**

A : 4

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**Q.no 9. Coaxial cable consists of --- concentric copper conductors**

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D :

**Q.no 59. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

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D :

**Q.no 60. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**

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C : Receiver Sliding Window

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**Q.no 1. Data communication system within a building or campus is \_\_\_\_\_**

A:LAN

B:WAN

C:MAN

D:PAN

**Q.no 2. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

D :

**Q.no 3. Frame relay has \_\_\_\_\_**

A : Only physical layer

B : Only data link layer

C : Only network layer

D : Both physical and data link layer

**Q.no 4. Count-to -Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

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C : Link state routing

D :

**Q.no 5. A backbone is usually a \_\_\_\_\_.**

A : Star

B : Bus

C : Star OR Bus

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B : IEEE 802.11b

C : IEEE 802.15.4

**D : IEEE 802.11g**

**Q.no 8. Link state packets are built in \_\_\_\_\_**

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A : Virtual circuit networks

B : Datagram networks

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C : Network layer

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A : Connection oriented networks

**B : Connection less networks**

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**Q.no 38. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

**B : Gateway**

C : Bridge

D : Hub

**Q.no 39. A collection of computers and devices connected together via communication devices and transmission media is called a**

A : Workgroup

B : Server

C : Mainframe

**D : Network**

**Q.no 40. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

**A : FHSS and DSSS**

B : THSS and FHSS

C : THSS and DSSS

D :

**Q.no 41. Bridge works in which layer of the OSI model**

A : Application layer

A : A. Transport layer

C : Network layer

**D : Data link layer**

**Q.no 42. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.**

A : Stack

**B : Queue**

C : Hash

D :

**Q.no 43. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

**C : IEEE 802.11**

D : IEEE 802.15

**Q.no 44. In TDM, slots are further divided into \_\_\_\_\_**

A : Seconds

**B : Frames**

C : Packets

D : Bits

**Q.no 45. What is NIC used for?**

A : Consists IP Address

**B : Consists MAAC Address**

C : Consists PORT Address

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**Q.no 46. Geostationary satellites \_\_\_\_\_**

**A : Are placed at a fixed point above the earth**

B : Rotate the earth about a fixed axis

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D :

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A : Digital modulation

B : Amplitude modulation

C : Frequency modulation

D : Phase modulation

**Q.no 48. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

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B : CSMA/CA

C : either (1) or (2)

D : both (1) and (2)

**Q.no 49. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.**

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C : Only when station B receives frame with errors

D :

**Q.no 56. Multiplexing is used in \_\_\_\_\_**

A : Packet switching

**B : Circuit switching**

C : Data switching

D : Packet & Circuit switching

**Q.no 57. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

**D : Packet switching and Circuit switching**

**Q.no 58. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

**C : Software**

D :

**Q.no 59. Security based connection is provided by which layer?**

A : Network layer

B : Session layer

C : Application layer

**D : Transport layer**

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**A : two times**

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C : LEO Satellites

D :

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**A : Encapsulating PPP frames inside Ethernet frames**

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A : Device that allows wireless devices to connect to a wired network

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**Q.no 9. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

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A:TCP

B:IP

C:UDP

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A : Router

B : Bridge

C : Repeater

D :

**Q.no 12. WAN stands for \_\_\_\_\_**

A : World area network

**B : Wide area network**

C : Web area network

D : Web access network

**Q.no 13. To connect networks of similar protocols \_\_\_\_\_ are used.**

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**B : Bridges**

C : Gateways

D :

**Q.no 14. Which network topology requires a central controller or hub?**

**A : Star**

B : Mesh

C : Ring

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**Q.no 15. In which routing method do all the routers have a common database?**

A : Distance vector

B : Link vector

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B : Congestion control

C : Routing

**D : Framing**

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A : Controlled access

B : Channelization

C : Random access

D :

**Q.no 35. In asynchronous serial communication the physical layer provides \_\_\_\_\_**

A : Start and Stop Signaling

B : Flow control

C : Both start & stop signaling and flow control

D :

**Q.no 36. What does protocol defines?**

A : Protocol defines what data is communicated.

B : Protocol defines how data is communicated.

C : Protocol defines when data is communicated.

D : D. All of above

**Q.no 37. Which of the following is not correct in relation to multi-destination routing?**

A : Is same as broadcast routing

B : Contains the list of all destinations

C : Data is not sent by packets

D :

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A : IP Address

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- A : Traffic aware routing
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- A : Coaxial cable
- B : Twisted pair cable
- C : Optical fiber**
- D : Electrical cable

**Q.no 44. Which one of the following event is not possible in wireless LAN.**

- A : Collision detection**
- B : Acknowledgement of data frames
- C : Multi-mode data transmission
- D :

**Q.no 45. TCP and UDP are called \_\_\_\_\_**

- A : Application protocols
- B : Session protocols
- C : Transport protocols**
- D :

**Q.no 46. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_.**

- A : Protocol stack**
- B : Protocol architecture
- C : Protocol suite
- D :

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A : Time division multiplexing

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**A : Logical link control sublayer**

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**B : Low Earth Orbit (LEO)**

C : Geosynchronous Earth Orbit (GEO)

D : Highly Elliptical Orbit (HEO)

**Q.no 39. What is NIC used for?**

A : Consists IP Address

**B : Consists MAAC Address**

C : Consists PORT Address

D :

**Q.no 40. Bridge works in which layer of the OSI model**

A : Appliation layer

B : A. Transport layer

C : Network layer

**D : Data link layer**

**Q.no 41. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.**

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**Q.no 42. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

C : IEEE 802.11

D : IEEE 802.15

**Q.no 43. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

A : CSMA/CD

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**Q.no 44. Datagram networks mainly refers to \_\_\_\_\_**

A : Connection oriented networks

**B : Connection less networks**

C : Telephone networks

D :

**Q.no 45. A collection of computers and devices connected together via communication devices and transmission media is called a**

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**Q.no 47. Which transmission media provides the highest transmission speed in a network?**

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**Q.no 50. Which of the following is not correct in relation to multi-destination routing?**

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**B : Multiplexing**

C : Microplexing

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**Q.no 58. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

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B : Link vector

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A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 10. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

B : IEEE 802.11

C : IEEE 802.2

D :

**Q.no 11. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

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B : IEEE 802.11b

C : IEEE 802.15.4

D : IEEE 802.11g

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B : Encapsulating Ethernet frames inside PPP frames

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D :

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B : FTPP

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A : Protocol stack

B : Protocol architecture

C : Protocol suite

D :

**Q.no 32. Which address is used in an internet employing the TCP/IP protocols?**

A : physical address and logical address

B : port address

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D : all of the mentioned

**Q.no 33. Which one of the following algorithm is not used for congestion control?**

A : Ttraffic aware routing

B : Admission control

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**Q.no 34. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client**

A : IP Address

B : MAAC Address

C : PORT Address

D :

**Q.no 35. A \_\_\_\_\_ LAN allows several LANs to be connected**

A : Wired

B : Wireless

C : Backbone

D :

**Q.no 36. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

A : FHSS and DSSS

B : THSS and FHSS

C : THSS and DSSS

D :

**Q.no 37. In TDM, slots are further divided into \_\_\_\_\_**

A : Seconds

B : Frames

C : Packets

D : Bits

**Q.no 38. TCP and UDP are called \_\_\_\_\_**

A : Application protocols

B : Session protocols

C : Transport protocols

D :

**Q.no 39. In \_\_\_\_\_ methods, a station cannot send unless it has been authorized by other stations**

A : Controlled access

B : Channelization

C : Random access

D :

**Q.no 40. Delimiting and synchronization of data exchange is provided by**

A : Application layer

B : Session layer

C : Transport layer

D : data layer

**Q.no 41. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

B : Gateway

C : Bridge

D : Hub

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A : Provide an extra measure of security

B : Reduce network traffic

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D : both (1) and (2)

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**Q.no 52. Transport layer can identify the symptoms of overload nodes using \_\_\_\_\_**

A : Flow control

B : Traffic control

C : Byte orientation

D :

**Q.no 53. Buffer overrun can be reduced by using what?**

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B : Flow control

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D :

**Q.no 54. Using which method in transport layer data integrity can be ensured?**

A : Checksum

B : Repetition codes

C : Cyclic redundancy checks

D :

**Q.no 55. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

C : Software

D :

**Q.no 56. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**

A : Control Variables

B : Sender Sliding Window

C : Receiver Sliding Window

D :

**Q.no 57. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.**

A : bridge

B : firewall

C : router

D :

**Q.no 58. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

A : Go-Back-N ARQ

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B : Mesh

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A : Shortest path first

B : Distance vector

C : Link state routing

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**Q.no 6. How many layers does OSI Reference Model has?**

A : 4

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**Q.no 8. High speed ethernet works on**

A : coaxial cable

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**Q.no 9. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

D : Stop and forward

**Q.no 10. Frames from one LAN can be transmitted to another LAN via the device**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 11. Count-to -Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

B : short path first

C : Link state routing

D :

**Q.no 12. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

B : Star network

C : Ring network

D :

**Q.no 13. In link state routing after the construction of link state packets new routes are computed using \_\_\_\_\_**

A : Bellman Ford algorithm

B : DES algorithm

C : Dijkstra's algorithm

D :

**Q.no 14. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 15. In wireless network an extended service set is a set of**

A : Connected basic service sets

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**Q.no 16. Bridge works in which layer of the OSI model?**

A : Application layer

B : Transport layer

C : Network layer

D : D. Datalink layer

**Q.no 17. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_**

A : Physical signaling sub layer

B : Physical data sub layer

C : Physical address sub layer

D : Physical transport sub layer

**Q.no 18. Data communication system within a building or campus is\_\_\_\_\_**

A:LAN

B:WAN

C:MAN

D:PAN

**Q.no 19. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 20. WAN stands for \_\_\_\_\_**

A : World area network

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A : Protocol stack

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**Q.no 27. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

C : Determines on which outgoing link a packet is to be forwarded

D : Forwards a packet to all outgoing links except the originated link

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**Q.no 30. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

A : Digital modulation

B : Amplitude modulation

C : Frequency modulation

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**Q.no 31. Which one of the following is not a function of network layer**

A : Inter-networking

B : Congestion control

C : Routing

D : Framing

**Q.no 32. Geostationary satellites \_\_\_\_\_**

A : Are placed at a fixed point above the earth

B : Rotate the earth about a fixed axis

C : Rotate the earth about a varying axis

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**Q.no 22. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

B : IEEE 802.11

C : IEEE 802.2

D :

**Q.no 23. Which of the following is developing Complementary Code Keying-OFDM?**

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C : IEEE 802.15.4

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A : Physical

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**Q.no 35. TCP and UDP are called \_\_\_\_\_**

A : Application protocols

B : Session protocols

C : Transport protocols

D :

**Q.no 36. Mostly ----is used in wireless LAN**

A : Time division multiplexing

B : Orthogonal frequency division multiplexing

C : Space division multiplexing

D :

**Q.no 37. VLANs can\_\_\_\_\_**

A : Provide an extra measure of security

B : Reduce network traffic

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**Q.no 50. Which one of the following algorithm is not used for congestion control?**

- A : Traffic aware routing
- B : Admission control
- C : Load shedding
- D : Routing information protocol

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- B : Circuit switching
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C : Receiver Sliding Window

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C : Stop-and-Wait ARQ

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B : Flow control

C : Byte orientation

D :

**Q.no 60. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

A : 32 bit

B : 48 bit

C : 16 bit

D :

**Q.no 1. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

B : Star network

C : Ring network

D :

**Q.no 2. In wireless network an extended service set is a set of**

A : Connected basic service sets

B : All stations

C : All access points

D :

**Q.no 3. Line –of- sight propagation is done by**

A : MEO Satellites

B : GEO Satellites

C : LEO Satellites

D :

**Q.no 4. Bridge works in which layer of the OSI model?**

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B : Transport layer

C : Network layer

D : Datalink layer

**Q.no 5. Data communication system within a building or campus is\_\_\_\_\_**

A:LAN

B:WAN

C:MAN

D:PAN

**Q.no 6. WAN stands for \_\_\_\_\_**

A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 7. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 8. In which routing method do all the routers have a common database?**

A : Distance vector

B : Link vector

C : Shortest path

D : Link state

**Q.no 9. In link state routing after the construction of link state packets new routes are computed using\_\_\_\_\_**

A : Bellman Ford algorithm

B : DES algorithm

C : Dijkstra's algorithm

D :

**Q.no 10. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A:TCP

B:IP

C:UDP

D:ARP

**Q.no 11. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_**

A : Physical signaling sub layer

B : Physical data sub layer

C : Physical address sub layer

D : Physical transport sub layer

**Q.no 12. Count-to –Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

B : short path first

C : Link state routing

D :

**Q.no 13. A device that connects to a network without the use of cables is said to be**

A : Distributed

B : Centralized

C : Wireless

D :

**Q.no 14. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 15. CRC stands for \_\_\_\_\_**

A : Cyclic redundancy check

B : Code repeat check

C : Code redundancy check

D :

**Q.no 16. Which network topology requires a central controller or hub?**

A : Star

B : Mesh

C : Ring

D : Bus

**Q.no 17. Frames from one LAN can be transmitted to another LAN via the device**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 18. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 19. The physical layer is concerned with \_\_\_\_\_**

A : Bit-by-Bit delivery

B : Process to Process delivery

C : Application to application delivery

D :

**Q.no 20. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

B : IEEE 802.11

C : IEEE 802.2

D :

**Q.no 21. Coaxial cable consists of --- concentric copper conductors**

A : One

B : Two

C : Three

D :

**Q.no 22. In \_\_\_\_\_ each station sends a frame whenever it has a frame to send.**

A : Slotted ALOHA

B : Pure ALOHA

C : Selective ALOHA

D :

**Q.no 23. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

D : Stop and forward

**Q.no 24. High speed ethernet works on**

A : coaxial cable

B : twisted pair cable

C : optical fiber

D :

**Q.no 25. Link state packets are built in \_\_\_\_\_**

- A : Shortest path first
- B : Distance vector
- C : Link state routing
- D :

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- A : Application layer
- B : Session layer
- C : Transport layer
- D : data layer

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- A : Connection oriented networks
- B : Connection less networks
- C : Telephone networks
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**Q.no 28. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

- A : CSMA/CD
- B : CSMA/CA
- C : either (1) or (2)
- D : both (1) and (2)

**Q.no 29. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

- A : Digital modulation
- B : Amplitude modulation
- C : Frequency modulation
- D : Phase modulation

**Q.no 30. What does protocol defines?**

A : Protocol defines what data is communicated.

B : Protocol defines how data is communicated.

C : Protocol defines when data is communicated.

D : D. All of above

**Q.no 31. UTP is commonly used in**

A:DSL

B : FTTP

C : HTTP

D:LAN

**Q.no 32. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

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**Q.no 33. Geostationary satellites \_\_\_\_\_**

A : Are placed at a fixed point above the earth

B : Rotate the earth about a fixed axis

C : Rotate the earth about a varying axis

D :

**Q.no 34. Galileo satellite is \_\_\_\_.**

A : Medium Earth Orbit (MEO)

B : Low Earth Orbit (LEO)

C : Geosynchronous Earth Orbit (GEO)

D : Highly Elliptical Orbit (HEO)

**Q.no 35. Which one of the following is not a function of network layer**

A : Inter-networking

B : Congestion control

C : Routing

D : Framing

**Q.no 36. Which one of the following event is not possible in wireless LAN.**

A : Collision detection

B : Acknowledgement of data frames

C : Multi-mode data transmission

D :

**Q.no 37. In TDM, slots are further divided into \_\_\_\_\_**

A : Seconds

B : Frames

C : Packets

D : Bits

**Q.no 38. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.**

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B : A. Transport layer

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**Q.no 41. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

C : IEEE 802.11

D : IEEE 802.15

**Q.no 42. Which transmission media provides the highest transmission speed in a network?**

A : Coaxial cable

B : Twisted pair cable

C : Optical fiber

D : Electrical cable

**Q.no 43. Frame relay provides error detection at the \_\_\_\_\_**

A : Physical layer

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**Q.no 55. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

A : Full duplexing

B : Multiplexing

C : Microplexing

D :

**Q.no 56. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

A : two times

B : three times

C : the same as

D :

**Q.no 57. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

C : Software

D :

**Q.no 58. Automatic repeat request error management mechanism is provided by**

A : Logical link control sublayer

B : Media access control sublayer

C : Network interface control sublayer

D :

**Q.no 59. Security based connection is provided by which layer?**

A : Network layer

B : Session layer

C : Application layer

D : Transport layer

**Q.no 60. Transport layer can identify the symptoms of overload nodes using \_\_\_\_\_**

- A : Flow control
- B : Traffic control
- C : Byte orientation
- D :

**Q.no 1. Which of the following is developing Complementary Code Keying-OFDM?**

- A : IEEE 802.11a
- B : IEEE 802.11b
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**Q.no 2. To connect networks of similar protocols \_\_\_\_\_ are used.**

- A : Routers
- B : Bridges
- C : Gateways
- D :

**Q.no 3. A \_\_\_\_\_ typically connects personal computers within a very limited geographical area, usually within a single building.**

- A:LAN
- B:WAN
- C:MAN
- D :

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D :

**Q.no 6. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

D :

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A : Connected basic service sets

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D :

**Q.no 8. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

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C : Ring network

D :

**Q.no 9. What is the access point (AP) in wireless LAN?**

A : Device that allows wireless devices to connect to a wired network

B : Wireless devices itself

C : Both 1 and 2

D :

**Q.no 10. A point-to-point protocol over Ethernet is a network protocol for**

- A : Encapsulating PPP frames inside Ethernet frames
- B : Encapsulating Ethernet frames inside PPP frames
- C : For security of Ethernet frames
- D :

**Q.no 11. Frame relay has \_\_\_\_\_**

- A : Only physical layer
- B : Only data link layer
- C : Only network layer
- D : Both physical and data link layer

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- B : Data link layer
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**Q.no 13. Transmission control protocol \_\_\_\_\_**

- A : Is a connection-oriented protocol
- B : Connection Less networks
- C : Virtual Connection
- D :

**Q.no 14. A backbone is usually a \_\_\_\_\_.**

- A : Star
- B : Bus
- C : Star OR Bus
- D :

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A : MEO Satellites

B : GEO Satellites

C : LEO Satellites

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A : Stream control transmission protocol

B : Internet control message protocol

C : Neighbor discovery protocol

D :

**Q.no 17. Adding 1 and 1 in modulo-2 arithmetic results in**

A : 0

B : 1

C : 2

D :

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C : Link state routing

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**Q.no 2. Which of the following is developing Complementary Code Keying-OFDM?**

A : IEEE 802.11a

B : IEEE 802.11b

C : IEEE 802.15.4

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**Q.no 3. Which network topology requires a central controller or hub?**

A : Star

B : Mesh

C : Ring

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**Q.no 4. A \_\_\_\_\_ operates in both the physical and the data link layer.**

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B : Transport

C : Network

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- B : 2
- C : 3
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D :

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B : Datagram networks

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B : Spider structure

C : Spider tree

D :

**Q.no 48. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_.**

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B : Protocol architecture

C : Protocol suite

D :

**Q.no 49. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

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B : Session layer

C : Application layer

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**Q.no 55. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.**

A : bridge

B : firewall

C : router

D :

**Q.no 56. Transport layer can identify the symptoms of overload nodes using \_\_\_\_\_**

A : Flow control

B : Traffic control

C : Byte orientation

D :

**Q.no 57. ATM can be used for \_\_\_\_\_**

A : Local area network

B : Wide area network

C : Campus area network

D : Networks covering any range

**Q.no 58. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

A : Go-Back-N ARQ

B : Selective Repeat ARQ

C : Stop-and-Wait ARQ

D :

**Q.no 59. Using which method in transport layer data integrity can be ensured?**

A : Checksum

B : Repetition codes

C : Cyclic redundancy checks

D :

**Q.no 60. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

A : 32 bit

B : 48 bit

C : 16 bit

D :

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B : Bus

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A : MEO Satellites

B : GEO Satellites

C : LEO Satellites

D :

**Q.no 5. What is the access point (AP) in wireless LAN?**

A : Device that allows wireless devices to connect to a wired network

B : Wireless devices itself

C : Both 1 and 2

D :

**Q.no 6. Link state packets are built in \_\_\_\_\_**

A : Shortest path first

B : Distance vector

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**Q.no 9. Most packet switches use this principle \_\_\_\_\_**

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C : Store and wait

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**Q.no 10. How many layers are in the TCP/IP model?**

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A : Is a connection-oriented protocol

B : Connection Less networks

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D :

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A : Only physical layer

B : Only data link layer

C : Only network layer

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B : Mesh

C : Ring

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A : Bellman Ford algorithm

B : DES algorithm

C : Dijkstra's algorithm

D :

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A : Physical layer

B : Data link layer

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D :

**Q.no 17. WAN stands for \_\_\_\_\_**

A : World area network

B : Wide area network

C : Web area network

D : Web access network

**Q.no 18. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

B : IEEE 802.11

C : IEEE 802.2

D :

**Q.no 19. Which of the following is a transport layer protocol?**

A : Stream control transmission protocol

B : Internet control message protocol

C : Neighbor discovery protocol

D :

**Q.no 20. A \_\_\_\_\_ operates in both the physical and the data link layer.**

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B : Bridge

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D :

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A : Distributed

B : Centralized

C : Wireless

D :

**Q.no 22. In which routing method do all the routers have a common database?**

A : Distance vector

B : Link vector

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- A : Traffic aware routing
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- A : Application layer
- B : Transport layer
- C : Network layer
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- A : Wired
- B : Wireless
- C : Backbone
- D :

**Q.no 31. In TDM, slots are further divided into \_\_\_\_\_**

- A : Seconds
- B : Frames
- C : Packets
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**Q.no 32. Galileo satellite is \_\_\_\_\_.**

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- B : Channelization
- C : Random access
- D :

**Q.no 34. UTP is commonly used in**

- A:DSL
- B : FTTP
- C : HTTP
- D:LAN

**Q.no 35. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

- A : Digital modulation
- B : Amplitude modulation
- C : Frequency modulation
- D : Phase modulation

**Q.no 36. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client**

- A : IP Address
- B : MAAC Address
- C : PORT Address
- D :

**Q.no 37. Geostationary satellites \_\_\_\_\_**

- A : Are placed at a fixed point above the earth
- B : Rotate the earth about a fixed axis
- C : Rotate the earth about a varying axis
- D :

**Q.no 38. TCP and UDP are called \_\_\_\_\_**

- A : Application protocols
- B : Session protocols
- C : Transport protocols
- D :

**Q.no 39. VLANs can\_\_\_\_\_**

- A : Provide an extra measure of security
- B : Reduce network traffic
- C : either (1) or (2)
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**Q.no 40. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.**

- A : Network layer
- B : Physical layer
- C : Transport layer
- D :

**Q.no 41. Which address is used in an internet employing the TCP/IP protocols?**

- A : physical address and logical address
- B : port address
- C : specific address
- D : all of the mentioned

**Q.no 42. What does protocol defines?**

- A : Protocol defines what data is communicated.
- B : Protocol defines how data is communicated.
- C : Protocol defines when data is communicated.
- D : D. All of above

**Q.no 43. Which of the following is not correct in relation to multi-destination routing?**

- A : Is same as broadcast routing
- B : Contains the list of all destinations
- C : Data is not sent by packets
- D :

**Q.no 44. Datagram networks mainly refers to \_\_\_\_\_**

- A : Connection oriented networks
- B : Connection less networks
- C : Telephone networks
- D :

**Q.no 45. Which of the following tasks is not done by data link layer?**

- A : Framing
- B : Error control
- C : Flow control
- D : Channel coding

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- A : Start and Stop Signaling
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A : Packet switching and Line switching

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**Q.no 55. Automatic repeat request error management mechanism is provided by**

A : Logical link control sublayer

B : Media access control sublayer

C : Network interface control sublayer

D :

**Q.no 56. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

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**Q.no 58. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

- A : Full duplexing
- B : Multiplexing
- C : Microplexing
- D :

**Q.no 59. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?**

- A : Only when no error occurs at the transmission level
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C : THSS and DSSS

D :

**Q.no 44. A list of protocols used by a system, one protocol per layer, is called \_\_\_\_\_.**

A : Protocol stack

B : Protocol architecture

C : Protocol suite

D :

**Q.no 45. Frame relay provides error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

D : Transport layer

**Q.no 46. A \_\_\_\_\_ LAN allows several LANs to be connected**

A : Wired

B : Wireless

C : Backbone

D :

**Q.no 47. What is NIC used for?**

A : Consists IP Address

B : Consists MAAC Address

C : Consists PORT Address

D :

**Q.no 48. Which address is used in an internet employing the TCP/IP protocols?**

A : physical address and logical address

B : port address

C : specific address

D : all of the mentioned

**Q.no 49. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_ to the client**

A : IP Address

B : MAAC Address

C : PORT Address

D :

**Q.no 50. What does protocol defines?**

A : Protocol defines what data is communicated.

B : Protocol defines how data is communicated.

C : Protocol defines when data is communicated.

D : D. All of above

**Q.no 51. Using which method in transport layer data integrity can be ensured?**

A : Checksum

B : Repetition codes

C : Cyclic redundancy checks

D :

**Q.no 52. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

C : Software

D :

**Q.no 53. Transport layer can identify the symptoms of overload nodes using \_\_\_\_\_**

A : Flow control

B : Traffic control

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A : Local area network

B : Wide area network

C : Campus area network

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**Q.no 60. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

A : 32 bit

B : 48 bit

C : 16 bit

D :

**Q.no 1. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

A : IEEE 802.5

B : IEEE 802.11

C : IEEE 802.2

D :

**Q.no 2. How many layers are in the TCP/IP model?**

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C : Repeater

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C : 6

D : 7

**Q.no 25. Data communication system within a building or campus is\_\_\_\_\_**

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B:WAN

C:MAN

D:PAN

**Q.no 26. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

C : IEEE 802.11

D : IEEE 802.15

**Q.no 27. Mostly ----is used in wireless LAN**

A : Time division multiplexing

B : Orthogonal frequency division multiplexing

C : Space division multiplexing

D :

**Q.no 28. Framing is done by**

- A : Appliation layer
- B : Transport layer
- C : Network layer
- D : Data link layer

**Q.no 29. Geostationary satellites \_\_\_\_\_**

- A : Are placed at a fixed point above the earth
- B : Rotate the earth about a fixed axis
- C : Rotate the earth about a varying axis
- D :

**Q.no 30. UTP is commonly used in**

- A:DSL
- B : FTTP
- C : HTTP
- D:LAN

**Q.no 31. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmission.**

- A : Network layer
- B : Physical layer
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- D :

**Q.no 32. Datagram networks mainly refers to \_\_\_\_\_**

- A : Connection oriented networks
- B : Connection less networks
- C : Telephone networks
- D :

**Q.no 33. Which one of the following event is not possible in wireless LAN.**

- A : Collision detection
- B : Acknowledgement of data frames
- C : Multi-mode data transmission
- D :

**Q.no 34. During datagram switching, the packets are placed in \_\_\_\_\_ to wait until the given transmission line becomes available.**

- A : Stack
- B : Queue
- C : Hash
- D :

**Q.no 35. Which of the following is not correct in relation to multi-destination routing?**

- A : Is same as broadcast routing
- B : Contains the list of all destinations
- C : Data is not sent by packets
- D :

**Q.no 36. UTP is commonly used in \_\_\_\_\_**

- A:DSL
- B : FTTP
- C : HTTP
- D :

**Q.no 37. TCP and UDP are called \_\_\_\_\_**

- A : Application protocols
- B : Session protocols
- C : Transport protocols
- D :

**Q.no 38. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

A : Repeater

B : Gateway

C : Bridge

D : Hub

**Q.no 39. VLANs can\_\_\_\_\_**

A : Provide an extra measure of security

B : Reduce network traffic

C : either (1) or (2)

D : both (1) and (2)

**Q.no 40. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

A : Digital modulation

B : Amplitude modulation

C : Frequency modulation

D : Phase modulation

**Q.no 41. In TDM, slots are further divided into \_\_\_\_\_**

A : Seconds

B : Frames

C : Packets

D : Bits

**Q.no 42. In asynchronous serial communication the physical layer provides \_\_\_\_\_**

A : Start and Stop Signaling

B : Flow control

C : Both start & stop signaling and flow control

D :

**Q.no 43. Bridge works in which layer of the OSI model**

- A : Appliation layer
- B : A. Transport layer
- C : Network layer
- D : Data link layer

**Q.no 44. Which of the following tasks is not done by data link layer?**

- A : Framing
- B : Error control
- C : Flow control
- D : Channel coding

**Q.no 45. Which one of the following algorithm is not used for congestion control?**

- A : Ttraffic aware routing
- B : Admission control
- C : Load shedding
- D : Routing information protocol

**Q.no 46. Which address is used in an internet employing the TCP/IP protocols?**

- A : physical address and logical address
- B : port address
- C : specific address
- D : all of the mentioned

**Q.no 47. What is NIC used for?**

- A : Consists IP Address
- B : Consists MAAC Address
- C : Consists PORT Address
- D :

**Q.no 48. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

A : FHSS and DSSS

B : THSS and FHSS

C : THSS and DSSS

D :

**Q.no 49. What device separates a single network into two segments but lets the two segments appear as one to higher protocols?**

A : Switch

B : Router

C : Bridge

D :

**Q.no 50. A \_\_\_\_\_ LAN allows several LANs to be connected**

A : Wired

B : Wireless

C : Backbone

D :

**Q.no 51. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

A : Full duplexing

B : Multiplexing

C : Microplexing

D :

**Q.no 52. Security based connection is provided by which layer?**

A : Network layer

B : Session layer

C : Application layer

D : Transport layer

**Q.no 53. Automatic repeat request error management mechanism is provided by**

- A : Logical link control sublayer
- B : Media access control sublayer
- C : Network interface control sublayer
- D :

**Q.no 54. Buffer overrun can be reduced by using what?**

- A : Traffic control
- B : Flow control
- C : Byte orientation
- D :

**Q.no 55. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?**

- A : Only when no error occurs at the transmission level
- B : When retransmission of old packet in a novel frame is necessary
- C : Only when station B receives frame with errors
- D :

**Q.no 56. Multiplexing is used in \_\_\_\_\_**

- A : Packet switching
- B : Circuit switching
- C : Data switching
- D : Packet & Circuit switching

**Q.no 57. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

- A : two times
- B : three times
- C : the same as
- D :

**Q.no 58. What are the Methods to move data through a network of links and switches?**

- A : Packet switching and Line switching
- B : Circuit switching and Line switching
- C : Line switching and bit switching
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**Q.no 59. A \_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.**

- A : bridge
- B : firewall
- C : router
- D :

**Q.no 60. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

- A : Hardware
- B : Physical wiring
- C : Software
- D :

**Q.no 1. A \_\_\_\_\_ operates in both the physical and the data link layer.**

- A : Router
- B : Bridge
- C : Repeater
- D :

**Q.no 2. In which routing method do all the routers have a common database?**

- A : Distance vector
- B : Link vector
- C : Shortest path
- D : Link state

**Q.no 3. Link state packets are built in \_\_\_\_\_**

A : Shortest path first

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D :

**Q.no 4. CRC stands for \_\_\_\_\_**

A : Cyclic redundancy check

B : Code repeat check

C : Code redundancy check

D :

**Q.no 5. Frame relay has error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

D :

**Q.no 6. Coaxial cable consists of --- concentric copper conductors**

A : One

B : Two

C : Three

D :

**Q.no 7. Which of the following is developing Complementary Code Keying-OFDM?**

A : IEEE 802.11a

B : IEEE 802.11b

C : IEEE 802.15.4

D : IEEE 802.11g

**Q.no 8. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

B : Star network

C : Ring network

D :

**Q.no 9. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 10. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

D : Stop and forward

**Q.no 11. Transmission control protocol \_\_\_\_\_**

A : Is a connection-oriented protocol

B : Connection Less networks

C : Virtual Connection

D :

**Q.no 12. Bridge works in which layer of the OSI model?**

A : Application layer

B : Transport layer

C : Network layer

D : Datalink layer

**Q.no 13. A \_\_\_\_\_ is a TCP name for a transport service access point.**

- A : Port
- B : Pipe
- C : Node
- D :

**Q.no 14. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

- A : IEEE 802.5
- B : IEEE 802.11
- C : IEEE 802.2
- D :

**Q.no 15. Adding 1 and 1 in modulo-2 arithmetic results in**

- A : 0
- B : 1
- C : 2
- D :

**Q.no 16. Line –of- sight propagation is done by**

- A : MEO Satellites
- B : GEO Satellites
- C : LEO Satellites
- D :

**Q.no 17. In wireless network an extended service set is a set of**

- A : Connected basic service sets
- B : All stations
- C : All access points
- D :

**Q.no 18. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 19. Count-to –Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

B : short path first

C : Link state routing

D :

**Q.no 20. How many layers are in the TCP/IP model?**

A : 4 layers

B : 5 layers

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A : Bellman Ford algorithm

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**Q.no 24. Which network topology requires a central controller or hub?**

A : Star

B : Mesh

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A : Physical

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**Q.no 26. Frame relay provides error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

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**Q.no 27. A collection of computers and devices connected together via communication devices and transmission media is called a**

A : Workgroup

B : Server

C : Mainframe

D : Network

**Q.no 28. Geostationary satellites \_\_\_\_\_**

- A : Are placed at a fixed point above the earth
- B : Rotate the earth about a fixed axis
- C : Rotate the earth about a varying axis
- D :

**Q.no 29. In \_\_\_\_\_ methods, a station cannot send unless it has been authorized by other stations**

- A : Controlled access
- B : Channelization
- C : Random access
- D :

**Q.no 30. Delimiting and synchronization of data exchange is provided by**

- A : Application layer
- B : Session layer
- C : Transport layer
- D : data layer

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- A : Protocol defines what data is communicated.
- B : Protocol defines how data is communicated.
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- A : IP Address
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**Q.no 35. A subset of a network that includes all the routers but contains no loops is called \_\_\_\_\_**

- A : Spanning tree
- B : Spider structure
- C : Spider tree
- D :

**Q.no 36. Which transmission media provides the highest transmission speed in a network?**

- A : Coaxial cable
- B : Twisted pair cable
- C : Optical fiber
- D : Electrical cable

**Q.no 37. Galileo satellite is \_\_\_\_.**

- A : Medium Earth Orbit (MEO)
- B : Low Earth Orbit (LEO)
- C : Geosynchronous Earth Orbit (GEO)
- D : Highly Elliptical Orbit (HEO)

**Q.no 38. What does Router do in a network?**

- A : Forwards a packet to all outgoing links
- B : Forwards a packet to the next free outgoing link
- C : Determines on which outgoing link a packet is to be forwarded
- D : Forwards a packet to all outgoing links except the originated link

**Q.no 39. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

- A : IEEE 802.16
- B : IEEE 802.3
- C : IEEE 802.11
- D : IEEE 802.15

**Q.no 40. Which one of the following is not a function of network layer**

- A : Inter-networking
- B : Congestion control
- C : Routing
- D : Framing

**Q.no 41. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

- A : CSMA/CD
- B : CSMA/CA
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A : Connected basic service sets

B : All stations

C : All access points

D :

**Q.no 25. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 26. Bits can be sent over guided and unguided media as analog signal by \_\_\_\_\_**

A : Digital modulation

B : Amplitude modulation

C : Frequency modulation

D : Phase modulation

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A : Start and Stop Signaling

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C : Both start &amp; stop signaling and flow control

D :

**Q.no 28. Bridge works in which layer of the OSI model**

A : Application layer

B : A. Transport layer

C : Network layer

D : Data link layer

**Q.no 29. Frame relay provides error detection at the \_\_\_\_\_**

- A : Physical layer
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**Q.no 30. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?**

- A : FHSS and DSSS
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**Q.no 31. A collection of computers and devices connected together via communication devices and transmission media is called a**

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**Q.no 32. A \_\_\_\_\_ LAN allows several LANs to be connected**

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- B : Wireless
- C : Backbone
- D :

**Q.no 33. Which of the following device is used to connect two systems, especially if the systems use different protocols?**

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- B : Gateway
- C : Bridge

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**Q.no 34. Which address is used in an internet employing the TCP/IP protocols?**

A : physical address and logical address

B : port address

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B : FTPP

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**Q.no 44. Geostationary satellites \_\_\_\_\_**

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**Q.no 48. What does protocol defines?**

- A : Protocol defines what data is communicated.
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B : firewall

C : router

D :

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B : 48 bit

C : 16 bit

D :

**Q.no 55. Multiplexing is used in \_\_\_\_\_**

A : Packet switching

B : Circuit switching

C : Data switching

D : Packet & Circuit switching

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B : Flow control

C : Byte orientation

D :

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B : Media access control sublayer

C : Network interface control sublayer

D :

**Q.no 58. The sharing of a medium and its link by two or more devices is called \_\_\_\_\_**

A : Full duplexing

B : Multiplexing

C : Microplexing

D :

**Q.no 59. Using which method in transport layer data integrity can be ensured?**

- A : Checksum
- B : Repetition codes
- C : Cyclic redundancy checks
- D :

**Q.no 60. Transport layer can identify the symptoms of overload nodes using \_\_\_\_\_**

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- B : Traffic control
- C : Byte orientation
- D :

**Q.no 1. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

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**Q.no 3. Bridge works in which layer of the OSI model?**

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- B : Transport layer
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- D : D. Datalink layer

**Q.no 4. A distributed network configuration in which all data/information pass through a central computer is**

A : Bus network

B : Star network

C : Ring network

D :

**Q.no 5. Which of the following is a transport layer protocol?**

A : Stream control transmission protocol

B : Internet control message protocol

C : Neighbor discovery protocol

D :

**Q.no 6. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 7. To connect networks of similar protocols \_\_\_\_\_ are used.**

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B : Bridges

C : Gateways

D :

**Q.no 8. Frames from one LAN can be transmitted to another LAN via the device**

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B : Bridge

C : Repeater

D :

**Q.no 9. Transmission control protocol \_\_\_\_\_**

A : Is a connection-oriented protocol

B : Connection Less networks

C : Virtual Connection

D :

**Q.no 10. Line –of- sight propagation is done by**

A : MEO Satellites

B : GEO Satellites

C : LEO Satellites

D :

**Q.no 11. In link state routing after the construction of link state packets new routes are computed using\_\_\_\_\_**

A : Bellman Ford algorithm

B : DES algorithm

C : Dijkstra's algorithm

D :

**Q.no 12. Frame relay has error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

D :

**Q.no 13. CRC stands for \_\_\_\_\_**

A : Cyclic redundancy check

B : Code repeat check

C : Code redundancy check

D :

**Q.no 14. Which network topology requires a central controller or hub?**

- A : Star
- B : Mesh
- C : Ring
- D : Bus

**Q.no 15. What is the access point (AP) in wireless LAN?**

- A : Device that allows wireless devices to connect to a wired network
- B : Wireless devices itself
- C : Both 1 and 2
- D :

**Q.no 16. Which of the following is developing Complementary Code Keying-OFDM?**

- A : IEEE 802.11a
- B : IEEE 802.11b
- C : IEEE 802.15.4
- D : IEEE 802.11g

**Q.no 17. How many layers are in the TCP/IP model?**

- A : 4 layers
- B : 5 layers
- C : 6 layers
- D : 7 layers

**Q.no 18. Coaxial cable consists of --- concentric copper conductors**

- A : One
- B : Two
- C : Three
- D :

**Q.no 19. ATM and frame relay are \_\_\_\_\_**

A : Virtual circuit networks

B : Datagram networks

C : Virtual private networks

D :

**Q.no 20. A \_\_\_\_\_ operates in both the physical and the data link layer.**

A : Router

B : Bridge

C : Repeater

D :

**Q.no 21. Coaxial cable consists of --- concentric copper conductors**

A : 1

B : 2

C : 3

D :

**Q.no 22. A backbone is usually a \_\_\_\_\_.**

A : Star

B : Bus

C : Star OR Bus

D :

**Q.no 23. Frame relay has \_\_\_\_\_**

A : Only physical layer

B : Only data link layer

C : Only network layer

D : Both physical and data link layer

**Q.no 24. A \_\_\_\_\_ is a TCP name for a transport service access point.**

A : Port

B : Pipe

C : Node

D :

**Q.no 25. In \_\_\_\_\_ each station sends a frame whenever it has a frame to send.**

A : Slotted ALOHA

B : Pure ALOHA

C : Selective ALOHA

D :

**Q.no 26. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?**

A : IEEE 802.16

B : IEEE 802.3

C : IEEE 802.11

D : IEEE 802.15

**Q.no 27. Mostly ----is used in wireless LAN**

A : Time division multiplexing

B : Orthogonal frequency division multiplexing

C : Space division multiplexing

D :

**Q.no 28. What does Router do in a network?**

A : Forwards a packet to all outgoing links

B : Forwards a packet to the next free outgoing link

C : Determines on which outgoing link a packet is to be forwarded

D : Forwards a packet to all outgoing links except the originated link

**Q.no 29. Which one of the following is not a function of network layer**

A : Inter-networking

B : Congestion control

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B : Low Earth Orbit (LEO)

C : Geosynchronous Earth Orbit (GEO)

D : Highly Elliptical Orbit (HEO)

**Q.no 33. TCP and UDP are called \_\_\_\_\_**

A : Application protocols

B : Session protocols

C : Transport protocols

D :

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A : IP Address

B : MAAC Address

C : PORT Address

D :

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B : Transport layer

C : Network layer

D : Data link layer

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A : Traffic aware routing

B : Admission control

C : Load shedding

D : Routing information protocol

**Q.no 37. Frame relay provides error detection at the \_\_\_\_\_**

A : Physical layer

B : Data link layer

C : Network layer

D : Transport layer

**Q.no 38. A subset of a network that includes all the routers but contains no loops is called**

A : Spanning tree

B : Spider structure

C : Spider tree

D :

**Q.no 39. In asynchronous serial communication the physical layer provides \_\_\_\_\_**

A : Start and Stop Signaling

B : Flow control

C : Both start & stop signaling and flow control

D :

**Q.no 40. Bridge works in which layer of the OSI model**

A : Application layer

B : A. Transport layer

C : Network layer

D : Data link layer

**Q.no 41. \_\_\_\_\_ augments the CSMA algorithm to detect collision.**

A : CSMA/CD

B : CSMA/CA

C : either (1) or (2)

D : both (1) and (2)

**Q.no 42. What is NIC used for?**

A : Consists IP Address

B : Consists MAAC Address

C : Consists PORT Address

D :

**Q.no 43. VLANs can\_\_\_\_\_**

A : Provide an extra measure of security

B : Reduce network traffic

C : either (1) or (2)

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B : Protocol architecture

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A : Workgroup

B : Server

C : Mainframe

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A : Connection oriented networks

B : Connection less networks

C : Telephone networks

D :

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A:DSL

B : FTPP

C : HTTP

D :

**Q.no 51. A virtual local area network (VLAN) is configured by \_\_\_\_\_.**

A : Hardware

B : Physical wiring

C : Software

D :

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A : bridge

B : firewall

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**Q.no 53. In pure ALOHA, the vulnerable time is \_\_\_\_\_ the frame transmission time.**

A : two times

B : three times

C : the same as

D :

**Q.no 54. ATM can be used for \_\_\_\_\_.**

A : Local area network

B : Wide area network

C : Campus area network

D : Networks covering any range

**Q.no 55. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?**

A : Go-Back-N ARQ

B : Selective Repeat ARQ

C : Stop-and-Wait ARQ

D :

**Q.no 56. Security based connection is provided by which layer?**

A : Network layer

B : Session layer

C : Application layer

D : Transport layer

**Q.no 57. What are the Methods to move data through a network of links and switches?**

A : Packet switching and Line switching

B : Circuit switching and Line switching

C : Line switching and bit switching

D : Packet switching and Circuit switching

**Q.no 58. Which feature of Go-Back-N ARQ mechanism possesses an ability to assign the sliding window in the forward direction?**

A : Control Variables

B : Sender Sliding Window

C : Receiver Sliding Window

D :

**Q.no 59. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?**

A : Only when no error occurs at the transmission level

B : When retransmission of old packet in a novel frame is necessary

C : Only when station B receives frame with errors

D :

**Q.no 60. The IPV4 Address Space is of \_\_\_\_\_ bit long.**

A : 32 bit

B : 48 bit

C : 16 bit

D :

**Q.no 1. A device that connects to a network without the use of cables is said to be**

A : Distributed

B : Centralized

C : Wireless

D :

**Q.no 2. Adding 1 and 1 in modulo-2 arithmetic results in**

A : 0

B : 1

C : 2

D :

**Q.no 3. High speed ethernet works on**

A : coaxial cable

B : twisted pair cable

C : optical fiber

D :

**Q.no 4. Transmission control protocol \_\_\_\_\_**

A : Is a connection-oriented protocol

B : Connection Less networks

C : Virtual Connection

D :

**Q.no 5. To connect networks of similar protocols \_\_\_\_\_ are used.**

A : Routers

B : Bridges

C : Gateways

D :

**Q.no 6. Count-to -Infinity problem occurs in \_\_\_\_\_**

A : Distance vector routing

B : short path first

C : Link state routing

D :

**Q.no 7. \_\_\_\_\_ provides a connection-oriented reliable service for sending messages**

A:TCP

B:IP

C:UDP

D:ARP

**Q.no 8. The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_**

A : Physical signaling sub layer

B : Physical data sub layer

C : Physical address sub layer

D : Physical transport sub layer

**Q.no 9. How many layers does OSI Reference Model has?**

A : 4

B : 5

C : 6

D : 7

**Q.no 10. IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data link layers.**

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A : Physical

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**Q.no 12. In which routing method do all the routers have a common database?**

A : Distance vector

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**Q.no 13. Which of the following is a transport layer protocol?**

A : Stream control transmission protocol

B : Internet control message protocol

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D :

**Q.no 14. Data communication system within a building or campus is\_\_\_\_\_**

A:LAN

B:WAN

C:MAN

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A : World area network

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A : Bit-by-Bit delivery

B : Process to Process delivery

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**Q.no 20. A \_\_\_\_\_ typically connects personal computers within a very limited geographical area, usually within a single building.**

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**Q.no 23. Most packet switches use this principle \_\_\_\_\_**

A : Stop and wait

B : Store and forward

C : Store and wait

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**Q.no 24. A point-to-point protocol over Ethernet is a network protocol for**

A : Encapsulating PPP frames inside Ethernet frames

B : Encapsulating Ethernet frames inside PPP frames

C : For security of Ethernet frames

D :

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