BASIC NETWORK THEORY

1. The computer network is
A) Network computer with a cable
B) Network computer without a cable
C) Both of the above
D) None of the above

2. FDDI used which type of physical topology?
A) Bus
B) Ring
C) Star

3. FTP stands for
A) File transfer protocol
B) File transmission protocol
C) Form transfer protocol
D) Form transmission protocol

4. Ethernet system uses which of the following technology.
A) Bus
B) Ring
C) Star
D) Tree

5. Which of the following are the network services?
A) File service
B) Print service
C) Database service
D) All of the above

6. If all devices are connected to a central hub, then topology is called
A) Bus Topology
B) Ring Topology
C) Star Topology
D) Tree Topology

7. FDDI stands for
A) Fiber Distributed Data Interface
B) Fiber Data Distributed Interface
C) Fiber Dual Distributed Interface
D) Fiber Distributed Data Interface

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 above

9. Which is the main function of the transport layer?
A) Node to node delivery
B) End to end delivery
C) Synchronization
D) Updating and maintaining routing tables

10. The …… layer change bits onto electromagnetic signals.
A) Physical
B) Transport
C) Data Link
D) Presentation

11. A group of computers and other devices connected together is called a network, and the concept of connected computers sharing resources is called ……
A) Networking
B) Inter-Network
C) Inter-Connection
D) Computer Group

12. A simple cabling method, known as the …… topology, allows about 30 computers on a maximum cable length of about 600 feet.
A) Star
B) Ring
C) Bus
D) Tree

13) …… is a set of connecting links between LANs.
A) CAN
B) WAN
C) CLAN
D) IAN

14) A ……. line considered as a fast WAN link, transmits at 1.5 Mbps, or 1 million bits per second.
A) L1
B) F1
C) W1
D) T1

15) The …….. elements are specialized computers to connect two or more transmission lines.

A) Networking
B) Broadcasting
C) Switching
D) Transfering

16) In …… the network contains numerous cables or leased telephone line, each one connecting a pair of IMPs.
A) Point-to-Point channels
B) Pair-to-Pair channels
C) Broadcast channels
D) Interface channels

17) The entities comprising the corresponding layers on different layers on different machines are called ……. processes.
A) entity
B) peer
C) peer-to-peer
D) layered

18) …….. entities are entities in the same layer on different machines.
A) Software
B) Service
C) Peer
D) Interface

19) To use a ……. network service, the service user first establishes a connection, uses the connection, and terminates the connection.
A) connection-oriented
B) connection-less
C) service-oriented
D) service-less

20) In …… service, each message carries the full destination address, and each one is routed through the system independent of all others.
A) connection-oriented
B) connection-less
C) service-oriented
D) service-less

Answers:

1. C) Both of the above
2. B) Ring
3. A) File transfer protocol
4. A) Bus
5. D) All of the above
6. C) Star Topology
7. A) Fiber Distributed… Interface
8. C) Mail service
9. B) End to end delivery
10. A) Physical
11. A) Networking
12. C) Bus
13. B) WAN
14. D) T1
15. C) Switching
16. A) Point-to-Point channels
17. B) peer
18) C) Peer
19) A) connection-oriented
20) B) connection-less

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1. A network that needs human beings to manually route signals is called….

A) Fiber Optic Network B) Bus Network

C) T-switched network D) Ring network

2. TCP/IP …….. layer corresponds to the OSI models to three layers.

A) Application B) Presentation

C) Session D) Transport

3. Which of the transport layer protocols is connection-less?

A) UDP B) TCP

C) FTP D) Nvt

4. Which of the following applications allows a user to access and change remote files without actual transfer?

A) DNS B) FTP

C) NFS D) Telnet

5. The data unit in the TCP/IP data link layer called a …..

A) Message B) Segment

C) Datagram D) Frame

6. DNS can obtain the …….. of host if its domain name is known and vice versa.

A) Station address B) IP address

C) Port address D) Checksum

7. Which of the following OSI layers correspond to TCP/IP's application layer?

A) Application B) Presentation

C) Session D) All of the above

8. Devices on one network can communicate with devices on another network via a …….

A) File Server B) Utility Server

C) Printer Server D) Gateway

9. A communication device that combines transmissions from several I/O devices into one line is a

A) Concentration B) Modifier

C) Multiplexer D) Full duplex file

10. Which layers of the OSI determines the interface often system with the user?

A) Network B) Application

C) Data link D) Session

11. Which of the following of the TCP/IP protocols is the used for transferring files from one machine to another?

A) FTP C) SNMP

B) SMTP D) Rpe

12. In which OSI layers does the FDDI protocol operate?

A) Physical B) Data link

C) Network D) A and B

13. In FDDI, data normally travel on ……

A) The primary ring B) The Secondary ring

C) Both rings D) Neither ring

14. The ……layer of OSI model can use the trailer of the frame for error detection.

A) Physical B) Data link

C) Transport D) Presentation

15. In a …….topology, if there are n devices in a network, each device has n-1 ports for cables.

A) Mesh B) Star

C) Bus D) Ring

16. Another name for Usenet is

A) Gopher B) Newsgroups

C) Browser D) CERN

17. The standard suit of protocols used by the Internet, Intranets, extra-nets and some other networks.

A) TCP/IP B) Protocol

C) Open system D) Internet work processor

18. State whether the following is True or False.

i) In bus topology, heavy Network traffic slows down the bus speed.

ii) It is multi-point configuration.

A) True, True B) True, False

C) False, True D) False, False

19. Which of the following is the logical topology?

A) Bus B) Tree

C) Star D) Both A and B

20. Which of the following is/ are the drawbacks of Ring Topology?

A) Failure of one computer, can affect the whole network

B) Adding or removing the computers disturbs the network activity.

C) If the central hub fails, the whole network fails to operate.

D) Both of A and B

ANSWERS:

1. C) T-switched network
2. A) Application
3. A) UDP

4. C) NFS
5. D) Frame
6. B) IP address
7. D) All of the above
8. D) Gateway
9. C) Multiplexer
10. B) Application
11. A) FTP
12. D) A and B
13. A) The primary ring
14. B) Data link
15. A) Mesh
16. B) Newsgroups
17. A) TCP/IP
18. A) True, True
19. C) Bus
20. D) Both of A and B

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1. In mesh topology, relationship between one device and another is ……..
A) Primary to peer
B) Peer to primary
C) Primary to secondary
D) Peer to Peer

2. The performance of data communications network depends on ……..
A) Number of users
B) The hardware and software
C) The transmission
D) All of the above

3. Find out the OSI layer, which performs token management.
A) Network Layer
B) Transport Layer
C) Session Layer
D) Presentation Layer

4. The name of the protocol which provides virtual terminal in TCP/IP model is.
A) Telnet
B) SMTP
C) HTTP

5. The layer one of the OSI model is
A) Physical layer
B) Link layer
C) Router layer
D) Broadcast layer

6. What is the name of the network topology in which there are bi-directional links between each possible node?
A) Ring
B) Star
C) Tree
D) Mesh

7. What is the commonly used unit for measuring the speed of data transmission?
A) Bytes per second
B) Baud
C) Bits per second
D) Both B and C

8. Which of the communication modes support two way traffic but in only once direction of a time?
A) Simplex
B) Half-duplex
C) Three – quarter's duplex
D) Full duplex

9. The loss in signal power as light travels down the fiber is called …….
A) Attenuation
B) Propagation
C) Scattering
D) Interruption

10. ……. is an interconnection of networks that provide universal communication services over heterogeneous physical networks.
A) Internet
B) Intranet
C) Network
D) LAN

11. Commercial networks providing access to the ……. to subscribers, and networks owned by commercial organizations for internal use that also have connections to the internet.
A) backbones
B) Network access points(NAPs)
C) Internet Exchange Points(IXPs)
D) All of the above

12. The …… layer is provided by the program that uses TCP/IP for communication.
A) Transport
B) Application

C) Internetwork
D) Network interface

13) The …….. layer Provides the end-to-end data transfer by delivering data from an application to its remote peer.
A) Transport
B) Application
C) Internetwork
D) Network interface

14) …….. provides connection-oriented reliable data delivery, duplicate data suppression, congestion control, and flow control.
A) TCP
B) IP
C) UDP
D) ICMP

15) ……. is used by applications that need a fast transport mechanism and can tolerate the loss of some data.
A) TCP
B) IP
C) UDP
D) ICMP

16) …… is a connection-less protocol that does not assume reliability from lower layers, which does not provide reliability, flow control, or error recovery.
A) Transmission control protocol
B) Internet protocol
C) User Datagram Protocol
D) Simple Mail Transfer Protocol

ANSWERS:

1. D) Peer to Peer
2. D) All of the above
3. C) Session Layer
4. A) Telnet
5. A) Physical layer
6. D) Mesh
7. B) Baud
8. B) Half-duplex
9. A) Attenuation
10. A) Internet
11. D) All of the above
12. B) Application
13. A) Transport
14. A) TCP
15. C) UDP
16. B) Internet protocol

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1. Which of the following is not the layer of TCP/IP protocol?
A) Application Layer
B) Session Layer
C) Transport Layer
D) Internetwork layer

2. ……. address use 7 bits for the <network> and 24 bits for the <host> portion of the IP address.
A) Class A
B) Class B
C) Class C
D) Class D

3. ……. addresses are reserved for multi-casting.
A) Class B
B) Class C
C) Class D
D) Class E

4. State the following statement is true or false.
i) In class B addresses a total of more than 1 billion addresses can be formed.
ii) Class E addresses are reserved for future or experimental use.
A) True, False
B) True, True
C) False, True
D) False, False

5. Which of the following statement is true?
i) An address with all bits 1 is interpreted as all networks or all hosts.
ii) The class A network 128.0.0.0 is defined as the loopback network.
A) i only
B) ii only
C) Both A and B
D) None of the above

6. Which is not the Regional Internet Registers (RIR) of the following?
A) American Registry for Internet Numbers (ARIN)
B) Europeans Registry for Internet Numbers (ERIN)
C) Reseaux IP Europeans (RIPE)

D) Asia Pacific Network Information Centre (APNIC)

7. Match the following IEEE No to their corresponding Name for IEEE 802 standards for LANs.

i) 802.3	a) WiFi
ii) 802.11	b) WiMa
iii) 802.15.1	c) Ethernet
iv) 802.16	d) Bluetooth

A) i-b, ii-c, iii-d, iv-a
B) i-c, ii-d, iii-a, iv-b
C) i-c, ii-a, iii-d, iv-b
D) i-b, ii-d, iii-c, iv-a

8. …….. was the first step in the evolution of Ethernet from a coaxial cable bus to hub managed, twisted pair network.
A) Star LAN
B) Ring LAN
C) Mesh LAN
D) All of the above

9. …… is the predominant form of Fast Ethernet, and runs over two pairs of category 5 or above cable.
A) 100 BASE-T
B) 100 BASE-TX
C) 100 BASE-T4
D) 100 BASE-T2

10. IEEE 802.3ab defines Gigabit Ethernet transmission over unshielded twisted pair (UTP) category 5, 5e or 6 cabling known as ……..
A) 1000 BASE-T
B) 1000 BASE-SX
C) 1000 BASE-LX
D) 1000 BASE-CX

ANSWERS:

1. B) Session Layer
2. A) Class A
3. C) Class D
4. B) True, True
5. A) i only
6. B) Europeans ….. (ERIN)
7. C) i-c, ii-a, iii-d, iv-b
8. A) Star LAN
9. B) 100 BASE-TX
10. A) 1000 BASE-T

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1. …….. is a high-performance fiber optic token ring LAN running at 100 Mbps over distances up to 1000 stations connected.
A) FDDI
B) FDDT
C) FDDR
D) FOTR

2. Which of the following is Gigabit Ethernet?
A) 1000 BASE-SX
B) 1000 BASE-LX
C) 1000 BASE-CX
D) All of the above

3. …….. 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) All of the above

4. …… 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

5. 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) All of the above

6. …….. implies that all subnets obtained from the same subnet mask.
A) Static subnetting
B) Dynamic subnetting
C) Variable length subnetting
D) Both B and C

7. State whether true or false.
i) A connection-oriented protocol can only use unicast addresses.
ii) The anycast service is included in IPV6.
A) True, True

B) True, False
C) False, True
D) False, False

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

9. …….. is responsible for converting the higher-level protocol addresses (IP addresses) to physical network addresses.
A) Address Resolution Protocol (ARP)
B) Reverse Address Resolution Protocol (RARP)
C) Bootstrap Protocol (BOOTP)
D) Internet Control Message Protocol (ICMP)

10. Which of the following is not a mechanism that DHCP supports for IP address allocation?
A) Automatic allocation
B) Static allocation
C) Dynamic allocation
D) Manual allocation

Answers:

1. A) FDDI
2. D) All of the above
3. B) Fast Ethernet
4. A) S/NET
5. C) Subnet number and host number
6. A) Static subnetting
7. A) True, True
8. D) All i, ii, iii, iv and v
9. A) Address Resolution Protocol (ARP)
10. B) Static allocation

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1. The examples of Interior Gateway Protocols (IGP) are.
i) Open Short Path First (OSPF)
ii) Routing Information Protocol (RIP)
iii) Border Gateway Protocol (BGP)
A) i only
B) i, and ii only
C) i and iii only
D) All i, ii and iii

2. FTP server listens to connections on port …….
A) 19 and 20
B) 20 and 21
C) 21 and 22
D) 20 and 22

3. Which of the following operations can be performed by using FTP.
i) Connect to a remote host
ii) Select directory
iii) Define the transfer mode
iv) List file available
A) i, and ii only
B) i, ii and iii only
C) ii, iii and iv only
D) All i, ii, iii and iv

4. A …….. is a set of information that is exchanged between a client and a web browser and a web server during an HTTP transaction.
A) infoset
B) clientinfo
C) cookie
D) transkie

5. Match the following HTTP status code to their respective definitions.
i) 400 a) OK
ii) 500 b) Not found
iii) 200 c) Continue
iv) 100 d) Internal server error
A) i-b, ii-d, iii-a, iv-c
B) i-a, ii-b, iii-c, iv-d
C) i-b, ii-c, iii-a, iv-d
D) i-b, ii-a, iii-c, iv-d

6. Loopback address ……. of IPv6 address is equivalent to the IPV4 loopback address 127.0.0.1.
A) (: : 1)
B) (: :)
C) (: : 0)
D) (1 : :)

7. Unspecified address …….. of IPV6 address is equivalent to the IPV4

unspecified address 0.0.0.0.
A) (: : 1)
B) (: :)
C) (: : 0)
D) (1 : :)

8. A simple cabling method, known as the …… topology allows about 30 computers on a maximum cable length of about 600 feet.
A) Ring
B) Bus
C) Star
D) Mesh

9. The …… layer is responsible for resolving access to shared media or resources.
A) Physical
B) Mac sub-layer
C) Network
D) Transport

10. A WAN typically spans a set of countries that have data rates less than …… Mbps.
A) 2
B) 1
C) 4
D) 100

ANSWERS:

1. B) i, and ii only
2. B) 20 and 21
3. D) All i, ii, iii and iv
4. C) cookie
5. A) i-b, ii-d, iii-a, iv-c
6. A) (: : 1)
7. B) (: :)
8. B) Bus
9. B) Mac sub layer
10. B) 1

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1. In addresses for ……. networks, the first 16 bits specify a particular network, and the last 16 bits specify a particular host.
A) class A
B) class B
C) class C
D) class D

2. The …….. protocol is based on end to end delivery.
A) SMTP
B) TCP
C) IP
D) SCTP

3. A/An …….. routing scheme is designed to enable switches to react to changing traffic patterns on the network.
A) static routing
B) fixed alternate routing
C) adaptive routing
D) dynamic routing

4. The IPV4 address is a …… address because it is assigned at the internet layer.
A) logical
B) physical
C) common
D) shared

5. The ……. layer provides a well defined service interface to the network layer, determining how the bits of the physical layer are grouped into frames.
A) Data Link
B) Physical
C) Network
D) Session

6. A distributed data processing configuration in which all activities must pass through a centrally located computer is called……
A) ring network
B) spider network
C) hierarchical network
D) data control network

7. The …… signals are used for the maintenance, troubleshooting, and overall operation of the network.
A) address
B) network management
C) call Information
D) supervisory

8. In …… a route is selected for each source-destination pair of in the network.
A) flooding

B) variable routing
C) fixed routing
D) random routing

9. In …….. type of service, each frame sent over the connection is numbered and the data link layer guarantees that each frame sent is indeed received.
A) connection less service
B) indirect link service
C) direct link service
D) connection oriented service

10. In …….. deliver, packets of a message are logically connected to one another.
A) connection less
B) indirect link
C) direct link
D) connection-oriented

ANSWERS:

1. B) class B

2. A) SMTP

3. C) adaptive routing

4. A) logical

5. A) Data Link

6. B) spider network

7. B) network management

8. C) fixed routing

9. D) connection-oriented service

10. D) connection-oriented

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1. Which of the following is/are the main part(s) of the basic cellular system.
A) A mobile Unit
B) A cell Site
C) A mobile Telephone Switching Office
D) All of the above

2. Fading of the received radio signals in a mobile communication environment occurs because of …..
A) Direct propagation
B) Multipath Propagation
C) Bi-path Propagation
D) None of the above

3.State whether True of False.
i) The cells or subdivisions of a geographical area are always hexagonal.
ii) A land to Mobile call originates through the Telephone exchange.
A) True, False
B) False, True
C) False, False
D) True, True

4. In …….. Frequency Spectrum is divided into smaller spectra and is allocated to each user.
A) TDMA
B) CDMA
C) FDMA
D) FGMA

5. In ……. multiple access is achieved by allocating different time slots for the different users.
A) TDMA
B) CDMA
C) FDMA
D) FGMA

6. State whether True of False.
i) In GSM-only TDMA is used.
ii) There is zero inter-channel interference in CDMA.
A) True, False
B) False, True
C) False, False
D) True, True

7. The basic GSM is based on _____ traffic channels.
A) connection oriented.
B) connection less.
C) packet switching.
D) circuit switching.

8. …… are typically characterized by very small cells, especially in densely populated areas.
A) 2G system.
B) 3G system.
C) 2.5G system.
D) 3.5G system.

9. A antenna which attempts to direct all its energy in a particular direction is called as a ……

A) Directional Antenna
B) One to One Antenna
C) Propagation Antenna
D) Single Direction Antenna

10. Which mode is used for installing networks in wireless communication device characteristics?
A) Fixed and wired.
B) Mobile and wired.
C) Fixed and wired.
D) Mobile and wireless.

ANSWERS:

1. D) All of the above

2. B) Multipath Propagation

3. B) False, True

4. C) FDMA

5. A) TDMA

6. C) False, False

7. A) connection-oriented.

8. C) 2.5G system.

9. A) Directional Antenna

10. C) Fixed and wired.

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1. …… tier it's much easier to design the application to be DBMS agnostic.
A) Middle application server
B) Multithreaded application
C) Application server
D) Client-server application

2. Which of the following is not the correct benefit of distributed computing.
A) Resource sharing
B) Performance
C) Availability
D) Security

3. ……. serve as the 'glue' between the client and server applications respectively, and that ORB.
A) ORB and ORB Interface
B) CORBA IDL stubs and skeletons
C) Client and servant
D) Client and server

4. In …… the client invokes the request and then blocks waiting for the response.
A) Deferred Synchronous Invocation
B) One way Invocation
C) Synchronous Invocation
D) Two-way Invocation

5. In ……. the client invokes the request, continues processing while the request is dispatched, and later collects the response.
A) Deferred Synchronous Invocation
B) One way Invocation
C) Synchronous Invocation
D) Two-way Invocation

6. ……. provides programmers a familiar programming model by extending the local procedure call to a distributed environment.
A) Distributed environment
B) Permanent procedure call
C) Process and file
D) Remote procedure call

7. The …….. in the object's descriptor is passed as the second argument to the remote object's constructor for the object to use during activation.
A)Activation Desc
B) Marshalled Object
C) Activation Exception
D) Activation Object

8. …… allows clients to invoke requests without having access to static stubs and allows the server to be written without having skeletons for the objects being invoked compiled statically into the program.
A) The Object Adapter
B) Dynamic Skeleton Interface
C) Server Process Activation
D) Client Process Activation

9. ……. serves as the glue between CORBA object implementations and the ORB itself.
A) The Object Adapter
B) Dynamic Skeleton Interface
C) Server Process Activation
D) Client Process Activation

10. …….. refers to computing technologies in which the hardware and software components are distributed across a network.
A) Client and Server
B) User and System
C) User and file server
D) User and database server

ANSWERS:

1. A) Middle application server

2. D) Security

3. B) CORBA IDL stubs and skeletons

4. C) Synchronous Invocation

5. A) Deferred Synchronous Invocation

6. D) Remote procedure call

7. B) Marshalled Object

8. B) Dynamic Skeleton Interface

9. A) The Object Adapter

10. A) Client and Server

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1. ……. specifies a complete set of rules for the connections and interactions of its physical and logical components for providing and utilizing communication services.
A) Computer Architecture
B) Communication Architecture
C) Network Architecture
D) Internet Architecture

2. The two most important network architecture or reference model is……
i) Layered reference model
ii) OSI reference model
iii) DSL reference model
iv) TCP/IP reference model
A) i and ii
B) ii and iii
C) iii and iv
D) ii and iv

3. The Open System Interconnection(OSI) reference model includes ……. layers.
A) five
B) six
C) seven
D) eight

4. …… is used to manage and synchronize conversation between two systems.
A) Physical Layer
B) Data Link Layer
C) Session Layer
D) Transport Layer

5. Which of the following is not the function of the physical layer?
A) Converting the digital bits into an electrical signal
B) Detecting and correcting errors
C) Defining voltages and data rates needed for transmission.
D) Activating, maintaining and deactivating the physical connection

6. ……. divides the outgoing messages into packets and assembles incoming packets into messages for the higher levels.
A) Physical Layer
B) Data Link Layer
C) Network Layer
D) Transport Layer

7. The TCP/IP reference model was used earlier by ……, before being used on the Internet.
A) ARPANET
B) PARPANET
C) USDNET
D) DODNET

8. Which of the following are True for the TCP/IP reference model?
i) The TCP protocol divides the large message into a sequence of packets into an IP packet.
ii) The IP protocol is used to put a message into the packet.
iii) It is necessary for all the packets in a single message to take the same route each time it is sent.
iv) The packets are passed from one network to another until they reach their destination.

A) i and iv only
B) i, ii and iv only
C) i, ii and iii only
D) All i, ii, iii and iv

9. Which of the following is not the layer of the TCP/IP model?
A) Internet Layer
B) Application Layer
C) Transport Layer
D) Presentation Layer

10. State whether the following statements are True or False.
i) In the TCP/IP model Transport layer guarantees delivery of packets.
ii) The network layer of the OSI model provides both connectionless and connection-oriented service.
iv) The TCP/IP model does not fit any other protocol stack.
A) i-True, ii-False, iii-False
B) i-False, ii-True, iii-True
C) i-False, ii-False, iii-True
D) i-True, ii-True, iii-False

ANSWERS:

1. C) Network Architecture

2. D) ii and iv

3. C) seven

4. C) Session Layer

5. B) Detecting and correcting errors

6. C) Network Layer

7. A) ARPANET

8. B) i, ii and iv only

9. D) Presentation Layer

10. B) i-False, ii-True, iii-True

DATA COMMUNICATION SERVICES

1. Which of the following is/are the examples of data communication services.
i) SMDS ii) Frame relay iii) X.25 iv) ATM
A) i, ii and iv only
B) i, ii and iii only
C) i, iii and iv only
D) All i, ii, iii and iv only

2. ……. was developed in 1970 by CCITT for providing an interface between the public packet-switched network and their customers.
A) SMDS
B) Frame relay
C) X.25
D) ATM

3. X.25 protocol is based on the protocols used in early ……. networks such as ARPANET, DATAPAC, TRANSPAC etc.
A) Packet Switching
B) Circuit Switching
C) Virtual Packet Circuit Switching
D) Virtual Packet Switching

4. ……. protocol is a physical layer protocol is used to specify the physical electrical and procedural interface between host and network.
A) X.25
B) X.21
C) SMDS
D) X.23

5. …… is a connection-oriented service which supports switched virtual circuits as well as the permanent circuits.
A) X.25
B) X.21
C) SMDS
D) ATM

6. In X.25, …… is established between a computer and network when the computer sends a packet to the network requesting to make a call a packet to the network requesting to make a call to another computer.
A) Virtual circuit
B) Switched circuit
C) Switched virtual circuit
D) Switched intelligent circuit

7. In order to allow the computers who do not use the X.25 to communicate with the ……., a packet assembler disassembler (PAD) is used.

A) X.21
B) SMDS
C) Frame relay
D) X.25

8. The layers defined by X.25 interface is/are
i) physical layer ii) data link layer iii) packet layer iv) application layer
A) i, ii and iv only
B) i, ii and iii only
C) i, iii and iv only
D) All i, ii, iii and iv only

9. The X.25 defines the interface for the exchange of packets between the user's machine (DTE) and the packet switching node to which this DTE is attached which is called as …….
A) DCE
B) DDE
C) DLC
D) HDL

10. At the physical level, …… physical interface is being used which is defined for the circuit-switched data network.
A) X.25
B) X.21
C) Frame relay
D) SMDS

11. The virtual circuit service of X.25 provides for two types of virtual circuits which are ……
i) virtual circuit ii) permanent virtual circuit iii) permanent virtual call iv) virtual call
A) i and ii only
B) ii and iii only
C) iii and iv only
D) ii and iv only

12. A …….. is a dynamically established virtual circuit using a call setup and call clearing procedure.
A) Permanent virtual circuit
B) Virtual call
C) Virtual circuit
D) Permanent virtual call

13. A …… is a fixed network assigned virtual where data transfer takes place as with virtual calls, but no call setup or clearing required.
A) Permanent virtual circuit
B) Virtual call
C) Virtual circuit
D) Permanent virtual call

14. Which of the following is/are the advantages of X.25
i) Frame delivery is more reliable ii) X.25 is faster than Frame relay iii) Frames are delivered in order iv) Flow control is provided

A) i, ii and iv only
B) i, ii and iii only
C) i, iii and iv only
D) All i, ii, iii and iv only

15. …… is a connection-oriented service, which can be imagined to be equivalent to a virtual leased line.
A) X.25
B) Frame relay
C) SMDS
D) ATM

16. ……. does not provide acknowledgments or normal flow control.
A) Frame relay
B) X.25
C) SMDS
D) ATM

17. …….. was developed for taking advantage of the high data rates and low error rates in the modern communication system.
A) X.25
B) Frame relay
C) SMDS
D) ATM

18. In …….. the cell control packets are used for setting up and clearing virtual circuits.
A) ATM
B) X.25
C) SMDS
D) Frame relay

19. Which of the following is/are the advantages of frame relay.
i) streamlined communication process ii) lower delay iii) higher throughput
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. In ……. the number of functions of a protocol at the user network interface is reduced.
A) X.25
B) Frame relay
C) SMDS
D) ATM

Answers

1. D) All i, ii, iii and iv only
2. C) X.25
3. A) Packet Switching
4. B) X.21
5. A) X.25
6. C) Switched virtual circuit
7. D) X.25
8. B) i, ii and iii only
9. A) DCE
10. B) X.21
11. D) ii and iv only
12. B) Virtual call
13. A) Permanent virtual circuit
14. C) i, iii and iv only
15. B) Frame relay
16. A) Frame relay
17. B) Frame relay
18. D) Frame relay
19. D) All i, ii and iii
20. B) Frame relay

---

1. Which of the following is/are the drawbacks of frame relay.
i) Frames are delivered unreliably ii) Packets having errors are simply discarded iii) Frame relay does not provide flow control iv) Frame relay is much slower than X.25
A) i, ii and iv only
B) ii, iii and iv only
C) i, ii and iii only
D) All i, ii, iii and iv

2. In …… packets may not be delivered in the same sequence like that at the sending end.
A) X.25
B) X.21
C) Frame relay
D) SMDS

3. …….. addressing is performed using virtual circuit addresses known as data-link connection identifiers (DLCIs).
A) X.25
B) X.21
C) ATM
D) Frame relay

4. State whether the statements are True or False
i) X.25 networks work at speed up to 64 kbps ii) X.25 does not provide flow control iii) X.25 provides acknowledgment signal
A) i-True, ii-False, iii-True
B) i-False, ii-False, iii-True
C) i-True, ii-True, iii-False
D) i-False, ii-True, iii-False

5. State whether the following statements are true.
i) Frame relay supports virtual leased line ii) Bad frame is discarded by frame relay iii) Frames are delivered in proper order
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

6. …… provides minimal services, primarily a way to determine the start and end of each frame and the detection of transmission error.
A) X.25
B) X.21
C) Frame relay
D) SMDS

7. In …… bad frames can be received back by sending an acknowledgment signal.
A) X.25
B) X.21

C) ATM
D) Frame relay

8. Asynchronous Transfer Mode (ATM) provides services under
i) Compressed voice and video ii) Synchronous TDM streams such as T-1 iii) Services using the constant bit rates
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

9. ATM has advantages of better reliability and fidelity which allows faster packet switching than ……..
A) X.21
B) X.25
C) Frame relay
D) SMDS

10. …….. is used in non-ISDN systems where the data rates are very high.
A) X.21
B) X.25
C) ATM
D) SMDS

11. The ……. of the ATM protocol involves the specifications of a transmission medium and signal encoding scheme.
A) Physical layer
B) ATM layer
C) High layer
D) ATM adaption layer (AAL)

12. …… is a high-speed switching network architecture created in the late 1980s / early 1990s to apply circuit switching concepts to data networks.
A) X.21
B) ATM
C) X.25
D) SMDS

13. …….. defines the transmission of data in fixed-size cells and it also defines the use of logical connections.
A) Physical layer
B) ATM layer
C) High layer
D) ATM adaption layer (AAL)

14. ……. is a service dependent layer, which is used for supporting the information transfer protocol not based on ATM.
A) Physical layer
B) ATM layer
C) High layer
D) ATM adaption layer (AAL)

15. The ATM protocol architecture consists of the following separate plans
i) user plane ii) control plane iii) server plane iv) plane management
A) i, ii and iv only
B) ii, iii and iv only
C) i, ii and iii only
D) All i, ii, iii and iv

16. Functions of the management plane related to a system include
i) provision of co-ordination between all planes ii) layer management iii) management functions relating to resources and parameters
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

17. In ATM, the information is transmitted in the form of small packets of fixed size are called ……..
A) ATM path
B) ATM cell
C) ATM routing
D) ATM follows

18. Which of the following is/are the advantages of virtual path
i) complicated network structure ii) improved network performance and reliability iii) Enhancement in-network services
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

19. …….. includes real-time service of ATM service.
A) Constant bit rate
B) Available bit rate

C) Unspecified bit rate
D) Specified bit rate

20. State whether the following statements are True or False.
i) ATM is the next step of packet switching technique ii) ATM allows multiple virtual channels with the data rates iii) Frame relay not allows multiple virtual channels with the data rates
A) i-True, ii-False, iii-True
B) i-False, ii-False, iii-True
C) i-True, ii-True, iii-False
D) i-False, ii-True, iii-True

Answers

1. C) i, ii and iii only
2. C) Frame relay
3. D) Frame relay
4. A) i-True, ii-False, iii-True
5. A) i and ii only
6. C) Frame relay
7. A) X.25
8. D) All i, ii and iii
9. B) X.25
10. C) ATM
11. A) Physical layer
12. B) ATM
13. B) ATM layer
14. D) ATM adaption layer (AAL)
15. A) i, ii and iv only
16. D) All i, ii and iii
17. B) ATM cell
18. B) ii and iii only
19. A) Constant bit rate
20. D) i-False, ii-True, iii-True

---

1. The narrowband ISDN has a smaller bandwidth and it can support the data rates of up to ……
A) 62Kbits/s
B) 64Kbits/s
C) 66Kbits/s
D) 68Kbit/s

2. The first generation of ISDN is called as a narrowband ISDN which has a …… orientation.
A) circuit switching
B) datagram packet switching
C) message switching
D) virtual circuit packet switching

3. The main important technical contribution of B-ISDN is the ……
A) SMDS
B) Frame relay
C) X.25
D) ATM

4. The main important technical contribution of narrowband ISDN is …..
A) SMDS
B) Frame relay
C) X.25
D) ATM

5. Which of the following is/are the services provided by ISDN.
i) Existing voice applications ii) Data applications iii) Fascimile(FAX) iv) Teletext services
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

6. The development of ISDN is governed by a set of recommendations issued by ……..
A) CCITT
B) ITTCC
C) TTICC
D) ITTCC

7. The …….. connects a large number of ISDN subscriber loop signals to the digital network.
A) Digital Networking office
B) Digital Central Office
C) Integrated Network Office
D) Digital Service Office

8. The ISDN is governed by recommendations from ITU-T which are called as ……. of recommendations.
A) T-series
B) U-series
C) I-series
D) D-series

9. Which of the following is/are the operations performed by the digital central office.
i) It provides access to the circuit-switched network
ii) It provides subscriber access to the

dedicated lines
iii) It accommodates multiplexed access via digital PBX and LAN
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

10. Digital central office providers subscriber access to the …… networks and timeshare transaction-oriented computer services.
A) packet-switched
B) circuit-switched
C) message switched
D) telegraph switched

11. The standard electronic mail source components have been defined and approved by the CCITT which are known as ……. family of standards for message handling system.
A) X.100
B) X.200
C) X.300
D) X.400

12. ……. message handling system model in ISDN is used for system model and services elements.
A) X.400
B) X.401
C) X.408
D) X.410

13. …… message handling system model in ISDN is used for remote operations and reliable transfer server.
A) X.400
B) X.401
C) X.408
D) X.410

14. The message format for ISDN can be classified into which of the following groups(s).
A) Call establishment message
B) Call control message
C) Call disconnect message
D) All of the above

15. In the group of call establishment messages contains which of the following messages.
i) Call set up
ii) User to use messages
iii) Call connect and disconnect acknowledgment
iv) Call processing alert
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

16. Call control message group includes which of the following messages.
i) Suspend or resume messages
ii) User to user messages
iii) Call release messages
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

17. …… are used for negotiating the network facilities for supporting additional services such as direct inward dialing, call forwarding etc.
A) Call establishment message
B) Call control message
C) Call disconnect message
D) Other messages

18. ……. field of a message format for ISDN gives reference to the channel information transfer activity to which a signaling packet pertains.
A) Protocol discriminator
B) Call reference
C) Message reference
D) Message type

19. State whether the following statements for the features of ISDN address structure are True or False.
i) The ISDN numbering plan is based on the telephone numbering plan
ii) It depends on the nature of service being provided
iii) It independent of the performance characteristics of the connection.
A) i-True, ii-True, iii-False
B) i-True, ii-False, iii-True
C) i-False, ii-True, iii-True
D) i-False, ii-False, iii-False

20. Which of the following is/are the types of ISDN channels.
i) A channel ii) B channel iii) D channel iv) H channel
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

Answers

1. B) 64Kbits/s
2. A) circuit switching
3. D) ATM
4. B) Frame relay
5. D) All i, ii, iii and iv
6. A) CCITT
7. B) Digital Central Office
8. C) I-series
9. D) All i, ii and iii
10. A) packet-switched
11. D) X.400
12. A) X.400
13. D) X.410
14. D) All of the above
15. C) i, iii and iv only
16. A) i and ii only
17. D) Other messages
18. B) Call reference
19. B) i-True, ii-False, iii-True
20. B) ii, iii and iv only

---

1. ……. can be used for carrying digital data, PCM encoded voice signal, coded at 64 Kbps.
A) A channel
B) B channel
C) D channel
D) H channel

2. Different types of connections which can be set up over a B channel of ISDN is/are ..
i) Packet switched connections ii) Circuit switched connections iii) Frame mode connections iv) Semi permanent connections
A) i, ii and iv only
B) i, iii and iv only
C) ii, iii and iv only
D) All i, ii, iii and iv

3…… are used for user information a higher bit rates such as fast facsimile, video, high speed data, high quality audio etc.
A) A channels
B) B channels
C) D channels
D) H channels

4. The basic channel structure of H channels is a package offered to the user which consists of ……. full-duplex 64Kbps B channel(s) and …… full-duplex 16Kbps D channel.
A) one, two
B) two, one
C) two, three
D) three, two

5. ……. of ISDN refers to certain finite arrangements of physical equipment or combination of equipment
A) Reference grouping
B) Reference points
C) Functional grouping
D) Functional points

6. …… in ISDN correspond to the conceptual points used in order to separate groups of functions.
A) Reference grouping
B) Reference points
C) Functional grouping
D) Functional points

7. …… includes the functions associated with the physical and electrical termination of the ISDN on the user's premises.
A) Network Termination 1 (NT1)
B) Network Termination 2 (NT2)
C) Network Termination 1,2 (NT12)
D) Terminal Equipment Type 1 (TE1)

8. ……. is a customer premises switching equipment and it is an intelligent device which performs switching and concentration functions.
A) Network Termination 1 (NT1)
B) Network Termination 2 (NT2)
C) Network Termination 1,2 (NT12)
D) Terminal Equipment Type 1 (TE1)

9. Digital telephones integrated voice/data terminals and digital fax are the examples of ……. in ISDN.

A) Network Termination 1 (NT1)
B) Network Termination 2 (NT2)
C) Network Termination 1,2 (NT12)
D) Terminal Equipment Type 1 (TE1)

10. The different reference points in ISDN is/are
i) Terminal point (T) ii) System Reference Point (S) iii) Rate Reference Point (R) iv) United Reference Point (U)
A) i, ii and iii only
B) i, iii and iv only
C) ii, iii and iv only
D) All i, ii, iii and iv

11. ……. is used to provide a non-ISDN interface between the user equipment with the adapter equipment.
A) Terminal point (T)
B) System Reference Point (S)
C) Rate Reference Point (R)
D) United Reference Point (U)

12. ……. in ISDN corresponds to minimum ISDN Network termination at the customer premise.
A) Terminal point (T)
B) System Reference Point (S)
C) Rate Reference Point (R)
D) United Reference Point (U)

13. Control signaling, packet switching and telemetry are the applications of …… .
A) A channel
B) B channel
C) D channel
D) H channel

14. …… in ISDN is used for establishing, maintaining and terminating the connectors on channel B.
A) Control signaling
B) Telemetry
C) Packet switching
D) Circuit switching

15. The B channel can be used for in which of the following applications.
i) circuit switching ii) semi-permanent circuits iii) packet switching iv) control signaling
A) i, ii and iv only
B) i, ii and iii only
C) ii, iii and iv only
D) i, iii and iv only

16. ISDN provides which of the following types of end to end communication services.
i) circuit-switched calls over a B channel
ii) Semi-permanent connections over a B channel
iii) Packet-switched calls over H channel
iv) Packet-switched calls over D channel
A) i, ii and iv only
B) i, ii and iii only
C) ii, iii and iv only
D) i, iii and iv only

17. ……. is used to distinguish between messages for the user-network call control and the other message types.
A) Protocol discriminator
B) Call reference
C) Message type
D) Comment

18. The Q.931 message in ISDN applies in which of the following applications.
i) circuit mode control ii) packet mode access connection control iii) uses to user signaling associated with circuit-switched calls iv) Message used with a global call reference
A) i, ii and iv only
B) i, ii and iii only
C) ii, iii and iv only
D) i, iii and iv only

19. Which of the following is/are the additional function(s) performed by the Q.931 messages.
i) call establishment ii) call information iii) call clearing
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. The two different bit rates for which one primary channel structure or primary access is designed are …… and …….
A) 1.444Mbps, 2.48Mbps
B) 1.544Mbps, 2.048Mbps
C) 1.644Mbps, 2.058Mbps
D) 1.445Mbps, 2.084Mbps

Answers

1. B) B channel
2. D) All i, ii, iii and iv
3. D) H channels
4. B) two, one
5. C) Functional grouping
6. B) Reference points
7. A) Network Termination 1 (NT1)
8. B) Network Termination 2 (NT2)
9. D) Terminal Equipment Type 1 (TE1)
10. A) i, ii and iii only
11. C) Rate Reference Point (R)
12. A) Terminal point (T)
13. C) D channel
14. A) Control signaling
15. B) i, ii and iii only
16. A) i, ii and iv only
17. A) Protocol discriminator
18. A) i, ii and iv only
19. D) All i, ii and iii
20. B) 1.544Mbps, 2.048Mbps

NETWORK SECURITY

1. Which of the following are the solutions to network security?
i) Encryption ii) Authentication
iii) Authorization iv) Non-repudiation
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

2. …… is to protect data and passwords.
A) Encryption
B) Authentication
C) Authorization
D) Non-repudiation

3. The following protocols and systems are commonly used to provide various degrees of security services in a computer network.
i) IP filtering ii) Reverse Address Translation
iii) IP Security Architecture (IPsec) iv) Firewalls v) Socks
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

4. 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

5. Which of the following is/are the types of firewalls?
A) Packet Filtering Firewall
B) Dual Homed Gateway Firewall
C) Screen Host Firewall
D) All of the above

6. The components of IP security includes …….
A) Authentication Header (AH)
B) Encapsulating Security Payload (ESP)
C) Internet Key Exchange (IKE)
D) All of the above

7. …….. is used to carry traffic of one protocol over the network that does not support that protocol directly.
A) Tunneling
B) Transferring
C) Trafficking
D) Switching

8. In ……. Mode, the authentication header is inserted immediately after the IP header.
A) Tunnel
B) Transport
C) Authentication
D) Both A and B

9. State true or false.
i) Socks are a standard for circuit-level gateways.
ii) NAT is used for the small number of hosts in a private network.
A) True, False
B) False, True
C) True, True
D) False, False

10. 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

Answers:

1. D) All i, ii, iii and iv
2. A) Encryption
3. B) i, iii, iv and v only
4. A) Chock point
5. D) All of the above
6. D) All of the above
7. A) Tunneling
8. A) Tunnel
9. C) True, True
10. B) VPN

---

1. The primary goal of the …….. protocol is to provide a private channel between communicating application, which ensures privacy of data authentication of the partners, and integrity.
A) SSL
B) ESP
C) TSL
D) PSL

2. The ……. is used to provide integrity check, authentication, and encryption to IP datagram.
A) SSL
B) ESP
C) TSL
D) PSL

3. In ……. mode, a common technique in packet-switched networks consist of wrapping a packet in a new one.
A) Tunneling
B) Encapsulation
C) Both A and B
D) None of the above

4. The ……. is a collection of protocols designed by Internet Engineering Task Force(IETF) to provide security for a packet at the Network level.
A) IPsec
B) Netsec
C) Packetsec
D) Protocolsec

5. At the lower layer of SSL, a protocol for transferring data using a variety of predefined cipher and authentication combinations called the …….
A) SSL handshake protocol
B) SSL authentication protocol
C) SSL record protocol
D) SSL cipher protocol

6. While initiating the SSL session, the client code recognizes the SSL request and establishes a connection through TCP Part …….. to the SSL code on the server.
A) 420
B) 1032
C) 443
D) 322

7. On the upper layer of SSL, a protocol for initial authentication and transfer of encryption keys called the ……
A) SSL handshake protocol
B) SSL authentication protocol
C) SSL record protocol
D) SSL cipher protocol

8. State whether the following statement is true.
i) An application-level gateway is often referred to as a proxy.
ii) In proxy, a direct connection is established between the client and the destination server.
A) True, False
B) False, True
C) True, True
D) False, False

9. In the packet-filtering router, the following information can be external from the packet header.
i) Source IP address ii) Destination IP address
iii) TCP/UDP source port iv) ICMP message type
v) TCP/UDP destination port
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

10. …….. mode is used whenever either end of a security the association is the gateway.
A) Tunnel
B) Encapsulating
C) Transport
D) Gateway

Answers:

1. A) SSL
2. B) ESP
3. C) Both A and B
4. A) IPsec
5. C) SSL record protocol
6. C) 443
7. A) SSL handshake protocol
8. A) True, False
9. D) All i, ii, iii, iv and v
10. A) Tunnel

ROUTING PROTOCOL AND ALGORITHM

1) Which of the following is not the requirement of routing function?
A. Correctness
B. Robustness
C. Delay time
D. Stability

2) The …… protocol allows the administrator to assign a cost, called the metric, to each route.
A. OSPF
B. RIP
C. BGP
D. BBGP

3) If there is only one routing sequence for each source destination pair, the scheme is known as …..
A. static routing
B. fixed alternative routing
C. standard routing
D. dynamic routing

4) The Open Shortest Path First(OSPF) protocol is an intra domain routing protocol based on …….. routing.
A. distance vector
B. link state
C. path vector
D. non distance vector

5) An/A …….routing scheme is designed to enable switches to react to changing traffic patterns on the network.
A. static routing
B. fixed alternative routing
C. standard routing
D. dynamic routing

6) The Routing Information Protocol(RIP) is an intra domain routing based on ……..routing.
A. distance vector
B. link state
C. path vector
D. distance code

7) The term …….. refers to which node or nodes in the network are responsible for the routing decision.
A. decision place
B. routing place
C. node place
D. switching place

8) In ……. routing the least cost route between any two nodes is the minimum distance.
A. path vector
B. distance vector
C. link state
D. switching

9) For centralized routing the decision is made by some designated node called ……
A. designated center
B. control center
C. network center
D. network control center

10) For purposes of routing, the Internet is divided into …….
A. wide area networks
B. autonomous networks
C. local area networks
D. autonomous system

11) In ……. a route is selected for each destination pair of nodes in the network.
A. flooding
B. variable routing
C. fixed routing
D. random routing

12) To create a neighborhood relationship, a router running BGP sends an ……. message.
A. open
B. update
C. keep alive
D. close

13) The technique which requires no network information required is ….
A. flooding
B. variable routing
C. fixed routing
D. random routing

14) An area is ….
A. part of an AS
B. composed of at least two AS
C. another term for an AS
D. composed more than two AS

15) Which of the following produces high traffic network?
A. Variable routing
B. Flooding
C. Fixed routing
D. Random routing

16) In …….. routing, we assume that there is one node (or more) in each autonomous system that acts on behave of the entire autonomous system.
A. distant vector
B. path vector
C. link state
D. multipoint

17) When a direct delivery is made, both the deliverer and receiver have the same ….
A. routing table
B. host id
C. IP address
D. Net id

18) In OSPF, a …… link is a network with several routers attached to it.
A. point-to-point
B. transient
C. stub
D. multipoint

19) In ……. routing, the mask and the destination address are both 0.0.0.0 in routing table.
A. next-hop
B. host-specific
C. network-specific
D. default

20) In ……. the router forwards the receive packet through only one of its interfaces.
A. unicasting
B. multicasting
C. broadcasting
D. point to point

ANSWERS:

1) C. Delay time
2) A. OSPF
3) B. fixed alternative routing
4) B. link state
5) C. standard routing
6) A. distance vector
7) A. decision place
8) B. distance vector
9) D. network control center
10) D. autonomous system
11) C. fixed routing
12) B. update
13) A. flooding
14) A. part of an AS
15) B. Flooding
16) B. path vector
17) D. Net id
18) B. transient
19) D. default
20) B. multicasting

---

1) Alternate and adaptive routing algorithm belongs to …….
A. static routing
B. permanent routing
C. standard routing
D. dynamic routing

2) ……. protocol is a popular example of a link-state routing protocol.

A. SPF
B. BGP
C. RIP
D. OSPF

3) An example of the routing algorithm is …
A. TELNET
B. TNET
C. ARPANET
D. ARNET

4) 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

5) In ……. routing, the routing table hold the address of just the next hop instead of complete route information.
A. next-hop
B. host-specific
C. network-specific
D. default

6) ……. was originally developed to provide a loop-free method of exchanging routing information between autonomous systems.
A. OSPF
B. EIGRP
C. BGP
D. RIP

7) In …… routing, the destination address is a network address in the routing tables.
A. next-hop
B. host-specific
C. network-specific
D. default

8) Logical partitioning of the network, authentication and faster convergence rate are the advantages of ….
A. OSPF
B. EIGRP
C. BGP
D. RIP

9) The ……. flag indicates the availability of a router.
A. up
B. host-specific
C. gateway
D. added by redirection

10) The types of autonomous system defined by BGP is/are ..
A. Stub
B. Multi-homed
C. Transit
D. All of the above

11) For a direct deliver, the …….. flag is on.
A. up
B. host specific
C. gateway
D. added by redirection

12) 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

13) 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

14) …….. supports the simultaneous use of multiple unequal cost paths to a destination.
A. OSPF
B. EIGRP
C. BGP
D. RIP

15) In multicast routing, each involved router needs to construct a …… path tree for each group.
A. average
B. longest
C. shortest
D. very longest

16) 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

17) In OSPF, a ……. link is a network is connected to only one router.
A. point-to-point
B. transient
C. stub
D. multipoint

18) …… 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

19) 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

20) …….. is the process of introducing external routers into an OSPF network.
A. Route redistribution
B. Route summarization
C. Route reintroducing
D. Route recreation

Answers:

1) D. dynamic routing
2) D. OSPF
3) C. ARPANET
4) C. Hybrid routing protocols
5) A. next-hop
6) C. BGP
7) C. network-specific
8) A. OSPF
9) D. added by redirection
10) D. All of the above
11) C. gateway
12) C. Transit
13) C. shortest
14) B. EIGRP
15) C. shortest
16) D. i, ii and iv only
17) C. stub
18) C. Route summarization
19) D. multipoint
20) A. Route redistribution

---

1) The principle of ……..states that the routing table is stored from the longest mask to the shortest mask.
A. first mask matching
B. shortest mask matching
C. longest mask matching
D. very shortest mask matching

2) …… are two popular examples of distance vector routing protocols.
A. OSPF and RIP
B. RIP and BGP
C. BGP and OSPF
D. BGP and SPF

3) …… deals with the issues of creating and maintaining routing tables.
A. Forwarding
B. Routing
C. Directing
D. None directing

4) During an adverse condition, the length of time for every device in the network to produce an accurate routing table is called the …….
A. accurate time
B. integrated time
C. convergence time
D. average time

5) A …… routing table contains information entered manually.
A. static
B. dynamic
C. hierarchical
D. non static

6) Which of the following is/are the uses of static routing methods.
A. To manually define a default route.
B. To provide more secure network environment.

C. To provide more efficient resource utilization.
D. All of the above

7) A ……. routing table is updated periodically using one of the dynamic routing protocols.
A. static
B. dynamic
C. hierarchical
D. non static

8) Which of the following is not the category of dynamic routing algorithm.
A. Distance vector protocols
B. Link state protocols
C. Hybrid protocols
D. Automatic state protocols

9) In …… forwarding, the full IP address of a destination is given in the routing table.
A. next-hop
B. network-specific
C. host-specific
D. default

10) To build the routing table, …….. algorithms allow routers to automatically discover and maintain awareness or the paths through the network.
A. Static routing
B. Dynamic routing
C. Hybrid routing
D. Automatic routing

11) In ……. forwarding, the mask and destination addresses are both 0.0.0.0 in the routing table.
A. next-hop
B. network-specific
C. host-specific
D. default

12) To build the routing table, …….. method use preprogrammed definitions representing paths through the network.
A. Static routing
B. Dynamic routing
C. Hybrid routing
D. Automatic routing

13) In ……. forwarding, the destination addresses is a network address in the routing table.
A. next-hop
B. network-specific
C. host-specific
D. default

14) …… allow routers to exchange information within an AS.
A. Interior Gateway Protocol(IGP)
B. Exterior Gateway Protocol(EGP)
C. Border Gateway Protocol(BGP)
D. Static Gateway Protocol(SGP)

15) In ……. forwarding, the routing table holds the address of just the next hop instead of complete route information.
A. next-hop
B. network-specific
C. host-specific
D. default

16) Which of the following is an example of Exterior Gateway Protocol.
A. Open Short Path First(OSPF)
B. Border Gateway Protocol(BGP)
C. Routing Information Protocol(RIP)
D. All of the above

17) A one-to-all communication between one source and all hosts on a network is classified as a ……
A. unicast
B. multicast
C. broadcast
D. point to point

18) …….. allow the exchange of summary information between autonomous systems.
A. Interior Gateway Protocol(IGP)
B. Exterior Gateway Protocol(EGP)
C. Border Gateway Protocol(BGP)
D. Dynamic Gateway Protocol(DGP)

19) A robust routing protocol provides the ability to …… build and manage the information in the IP routing table.
A. dynamically
B. statically
C. hierarchically
D. All of the above

20) State True or False for the definition of an autonomous system(AS).
i) An AS is defined as a physical portion of a larger IP network.

ii) An AS is normally comprised of an inter-network within an organization.
A. i-True, ii-True
B. i-True, ii-False
C. i-False, ii-True
D. i-False, ii-False

Answers:

1) C. longest mask matching
2) B. RIP and BGP
3) B. Routing
4) C. convergence time
5) A. static
6) D. All of the above
7) B. dynamic
8) D. Automatic state protocols
9) C. host-specific
10) B. Dynamic routing
11) D. default
12) A. Static routing
13) B. network-specific
14) A. Interior Gateway Protocol(IGP)
15) A. next-hop
16) B. Border Gateway Protocol(BGP)
17) C. broadcast
18) B. Exterior Gateway Protocol(EGP)
19) A. dynamically
20) C. i-False, ii-True

DATA TRANSMISSION AND PHYSICAL LAYER

1. …….. refers to information that is continuous.
A) Analog data
B) Digital data
C) Analog signal
D) Digital signal

2. ……. refers to information that has discrete states.
A) Analog data
B) Digital data
C) Analog signal
D) Digital signal

3**. …… has infinitely many levels of intensity over a period of time.**
A) Analog data
B) Digital data
C) Analog signal
D) Digital signal

4. …….. can have only limited number of defined values which is often simple as 0 or 1.
A) Analog data
B) Digital data
C) Analog signal
D) Digital signal

5. A …….. signal completes a pattern with in a measurable time frame called a period and repeats that pattern over subsequent identical periods.
A) periodic
B) framed
C) non periodic
D) discrete

6. The …….. of a signal is the absolute value of its highest intensity, proportional to the energy it carries.
A) phase
B) peak amplitude
C) frequency period
D) period

7. …….. refers to the amount of time in seconds, a signal needs to complete one cycle.
A) phase
B) peak amplitude
C) frequency
D) period

8. …… is the position of the waveform relative to time 0.
A) phase
B) peak amplitude
C) frequency
D) period

9…… is the rate of change with respect to time.
A) phase
B) peak amplitude
C) frequency
D) period

10. …….. is a characteristic of a signal traveling through a transmission medium which binds the period or the frequency of a simple sine wave to the

propagation speed of the medium.
A) Period
B) Frequency
C) Web-length
D) Phase

11. ……. is actually a combination of simple sine waves with different frequencies, amplitudes and phases.
A) Composite signal
B) Combined signal
C) Hybrid signal
D) All of the above

12. A ……. can be transmitted only a limited distance before attenuation, noise and other impairments distorts the integrity of the data.
A) Analog signal
B) Digital signal
C) Hybrid signal
D) All of the above

13. To achieve longer distances, the analog transmission system includes ……. that boost the energy of the signal.
A) repeaters
B) amplifiers
C) routers
D) boosters

14. A …….. receives the digital signal, recovers the pattern of 1s and 0s and re-transmits a new signal.
A) repeater
B) amplifier
C) router
D) booster

15. State whether the following statements are True or False for digital signal.
i) Analog data are encoded using a codec to produce digital bit stream
ii) Digital data are encoded to produce a digital signal with desired properties.
A) i-True, ii-False
B) i-True, ii-True
C) i-False, ii-True
D) i-False, ii-False

16. In digital transmission, analog signal propagated through ……..
A) repeaters
B) amplifiers
C) routers
D) boosters

17. We can compare the performance of analog transmission with that of digital transmission system based on the following factors.
i) effect of noise ii) distance to be covered iii) services provided
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

18. …….. receive the signal and noise at their input separate out the signal from noise and regenerate the signal which is free from noise.
A) repeaters
B) amplifiers
C) routers
D) separators

19. Which of the following are the advantages of digital transmission.
i) Digital transmission has better noise immunity
ii) It is possible to detect and correct the errors introduced during the data transmission.
iii) Digital transmission require a larger channel bandwidth as compared to analog system.
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. State whether the following statements are True or False for digital data transmission.
i) Digital modulation needs synchronization in case of synchronization in case of synchronous modulation.
ii) TDM(Time Division Multiplexing) technique can be used to transmit many voice channels over a single common transmission channel.
A) i-True, ii-False
B) i-True, ii-True

C) i-False, ii-True
D) i-False, ii-False

Answers

1. A) Analog data
2. B) Digital data
3. C) Analog signal
4. D) Digital signal
5. A) periodic
6. B) peak amplitude
7. D) period
8. A) phase
9. C) frequency
10. C) Web-length
11. A) Composite signal
12. B) Digital signal
13. B) amplifiers
14. A) repeater
15. B) i-True, ii-True
16. A) repeaters
17. D) All i, ii and iii
18. A) repeaters
19. A) i and ii only
20. B) i-True, ii-True

---

1. …… means sending a digital signal over a channel without changing the digital signal to an analog signal.
A) Baseband transmission
B) Broadband transmission
C) Digital transmission
D) Analog transmission

2. In ……. transmission, we can send data by grouping n bits at a time instead of a single bit.
A) parallel
B) serial
C) analog
D) digital

3. In …….. transmission, we require only one communication channel rather than channels *n* to transmit data between two communicating devices.
A) parallel
B) serial
C) analog
D) digital

4. …… is the loss of energy as the signal propagates outward, where the amount of energy depends on the frequency.
A) Noise
B) Delay distortion
C) Attenuation distortion
D) Dispersion

5. If the …….. is too much, the receiver may not be able to detect the signal at all or the signal may fall below the noise level.
A) Noise
B) Delay
C) Dispersion
D) Attenuation

6. Attenuation can be also expressed in decibel(dB) and commonly used because.
i) Signal strengths often fall off logarithmically
ii) Cascade losses and gains can be calculated with simple additions and subtractions
A) i only
B) ii only
C) Both of the above
D) None of the above

7. …… occurs due to velocity of propagation the frequency varies. Thus various frequency components of a signal arrive at the receiver at different times.
A) Noise
B) Delay distortion
C) Attenuation distortion
D) Dispersion

8. …….. can be defined as unwanted energy from source other than the transmitter.
A) Dispersion
B) Attenuation Distortion
C) Delay distortion
D) Noise

9. …… noise is caused by the random motion of the electrons in a wire and is avoidable.
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

10. Thermal noise is often referred to as …… noise, because it affects uniformly the different frequencies.
A) Black
B) White
C) Gray
D) Blue

11. …….. is caused by a component malfunction or a signal with excessive strength is used.
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

12. …….. is a noise where foreign signal enters the path of the transmitted signal.
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

13. …….. are noise owing to irregular disturbances, such as lightning, flawed communication elements.
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

14. …… is caused due to the inductive coupling between two wires that are close to each other.
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

15. Sometime when talking over the telephone, you can hear another conversation in the background which is ……..
A) Thermal
B) Intermodulation
C) Cross talk
D) Impulse

16. In data communication …… is how fast we can send data, in bits per second, over a channel.
A) data rate
B) data flow
C) data speed
D) baud rate

17. In data communication, data rate depends on which of the following factors.
i) The bandwidth available ii) The level of the signals iii) The level of noise
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

18. …….. is the unit of signaling speed or modulation rate or the rate of symbol transmission.
A) Data rate
B) Bit rate
C) Signal to Noise Ratio
D) Baud rate

19. A …… is a discrete time signal having finite number of amplitude.
A) Analog signal
B) Digital signal
C) Hybrid signal
D) Discrete signal

20. The range of frequencies that contain the information is called as the ……..
A) Bandwidth
B) Bit rate
C) Signal to Noise Ratio
D) Baud rate

Answers

1. A) Baseband transmission
2. A) parallel
3. B) serial
4. C) Attenuation distortion
5. D) Attenuation
6. C) Both of the above
7. B) Delay distortion
8. D) Noise
9. A) Thermal
10. B) White
11. B) Intermodulation
12. C) Cross talk
13. D) Impulse
14. C) Cross talk
15. C) Cross talk

16. A) data rate
17. D) All i, ii and iii
18. D) Baud rate
19. B) Digital signal
20. A) Bandwidth

---

1. …….. is the process of converting binary data, a sequence of bits to a digital signal.
A) Liners coding
B) Line coding
C) Digital coding
D) Binary coding

2. Which of the following is/are the characteristics of line coding.
i) signal level and data level ii) DC component iii) Pulse rate and bit rate iv) self-synchronization
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

3. Which of the following is/are the categories of line codes
i) Unipolar codes ii) Non polar codes iii) Bipolar codes iv) Polar codes
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

4. …… have only one voltage level other than zero, so the encoded signal will have either +*A* volts value or 0.
A) Unipolar codes
B) Bipolar codes
C) Non polar codes
D) Polar codes

5. …… uses two voltage levels other than zero such as +*A/2* and -*A/2* volts.
A) Unipolar codes
B) Bipolar codes
C) Non polar codes
D) Polar codes

6. In …… format, a logic 1 is represented by a pulse of full bit duration Tb and amplitude +A while a logic 0 is represented by an off pulse or zero amplitude.
A) Unipolar RZ
B) Unipolar NRZ
C) Polar RZ
D) Polar NRZ

7. ……. format shows that opposite polarity pulses of amplitude +-A/2 are used to represent logic 1 and 0. .
A) Unipolar RZ
B) Unipolar NRZ
C) Polar RZ
D) Polar NRZ

8. In ……. format, the successive 1s are represented by pulses with alternating polarity and no pulse is transmitted for a logic 0.
A) Unipolar RZ
B) Unipolar NRZ
C) Bipolar NRZ
D) Polar NRZ

9. An attractive feature of the …….. the absence of a dc component even through the input binary data may contain long string of 0s and 1s.
A) Bipolar format
B) Unipolar format
C) Split Phase Manchester format
D) Polar format

10. In ……. format, symbol 1 is represented by transmitting a positive pulse of +A/2 amplitude for one half of the symbol duration, followed by a negative pulse of amplitude -A/2 for remaining half of the symbol duration.
A) Bipolar
B) Unipolar
C) Split Phase Manchester
D) Polar

11. Which of the following is/are the basic types of modulation techniques for transmission of digital signals.
i) Amplitude Shift Keying(ASK) ii) Frequency Shift Keying(FSK) iii) Phase Shift Keying(PSK)
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

12. …….. is a multilevel modulation in which four phase shift are used for representing four different symbols.

A) ASK
B) FSK
C) PSK
D) QPSK

13. The disadvantage of …….. is that it is very sensitive to noise, therefore it finds limited application in data transmission.
A) ASK
B) FSK
C) PSK
D) QPSK

14. ……. is the simplest type of digital CW modulation where the carrier is sinewave of frequency fc.
A) ASK
B) FSK
C) PSK
D) QPSK

15. State the following statements are True or False for the advantage of FSK.
i) FSK is relatively easy to implement
ii) It has better noise immunity than ASK.
iii) It increases the channel bandwidth required to transmit the FSK signal.
A) i-False, ii-True, iii-False
B) i-True, ii-True, iii-False
C) i-True, ii-False, iii-False
D) i-True, ii-True, iii-True

16. The ……. is not preferred for the high speed modems since with increase in speed, the bit rate increases.

A) ASK
B) FSK
C) PSK
D) QPSK

17. …… is used for high bit rates, where the phase of the sinusoidal carrier is changed according to the data bit to be transmitted.
A) ASK
B) FSK
C) PSK
D) QPSK

18. ……. has the best performance of all the systems in presence of noise, which gives the minimum possibility of error.
A) QPSK
B) BPSK
C) QAM
D) FSK

19. Which of the following is/are the advantages of BPSK.
i) BPSK has a bandwidth which is lower than that of the BPSK signal.
ii) BPSK is relatively easy to implement
iii) BPSK has a very good noise immunity.
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. As the telephone lines have a very low bandwidth, it is not possible to satisfy the bandwidth requirement of …… at higher speed.
A) ASK
B) PSK
C) FSK
D) QPSK

Answers

1. B) Line coding
2. D) All i, ii, iii and iv
3. C) i, iii and iv only
4. A) Unipolar codes
5. D) Polar codes
6. B) Unipolar NRZ
7. C) Polar RZ
8. C) Bipolar NRZ
9. A) bipolar format
10. C) Split Phase Manchester
11. D) All i, ii and iii
12. D) QPSK
13. A) ASK
14. A) ASK
15. B) i-True, ii-True, iii-False
16. B) FSK
17. C) PSK
18. B) BPSK

19. C) i and iii only
20. C) FSK

---

1. …… cables are very cheap and easy to install, but they are badly affected by noise interference.
A) STP
B) UTP
C) Co-axial
D) Optical Fiber

2. Twisting of wires in twisted pair cable helps to
A) increase the data speed
B) reduce the effect of noise or external interface
C) make the cable stronger
D) make the cable attractive

3. Applications of twisted pair cable is/are
i) In telephone lines to carry voice and data channels
ii) In the DSL line (ADSL)
iii) In the ISDN (Integrated Services Digital Network)
iv) In thick and thin Ethernet
A) i, ii and iii only
B) i, iii and iv only
C) ii, iii and iv only
D) All i, ii, iii and iv only

4. …… UTP cables were originally used for voice communication with low data rates.
A) Category 1
B) Category 2
C) Category 1 and 2
D) Category 1, 2 and 3

5. Category 4 UTP cable offers data rates up to ……..
A) 10 Mbps
B) 15 Mbps
C) 20 Mbps
D) 25 Mbps

6. Category 6 UTP cable offers data rates up to ……..
A) 100 Mbps
B) 200 Mbps
C) 300 Mbps
D) 400 Mbps

7. State whether the following statements are True for twisted pair cable.
i) The attenuation of both STP and UTP ii) The cost of UTP is higher than STP iii) The installation of STP is fairly easy than UTP
A) i and iii only
B) i and ii only
C) ii and iii only
D) All i, ii and iii

8. A modulator …….. telephone connector is used to connect a four pair twisted pair cable.
A) RJ35
B) RJ45
C) RJ11
D) RJ21

9. …….. cable also find application in cable television networks for computer communications.
A) Co-axial
B) UTP
C) STP
D) Optical Fiber

10. …… cable suffers more impairment than …… cable which in turn suffers more than ……
A) Co-axial, Twisted, Optical Fiber
B) Twisted, Co-axial, Optical Fiber
C) Co-axial, Optical Fiber, Twisted
D) Twisted, Optical Fiber, Co-axial

11. …….. is the overlapping of frequency bands which can distort/wipe-out a signal.
A) Noise
B) Attenuation
C) Interference
D) Distortion

12. State the following statements are True or False for the characteristics of Co-axial cable.
i) Due to the shield provided, this cable has excellent noise immunity
ii) It has large bandwidth and low losses
iii) The attenuation is high as compared to the twisted pair.
A) True, True, False
B) False, True, True

C) True, False, False
D) False, False, True

13. ……. cable is suitable for point to point or point to multi-point applications. In fact, this is the most widely used medium for local area networks.
A) Optical Fiber
B) UTP
C) STP
D) Co-axial

14. Co-axial cables which are categorized under …….. RG(Radio Government) ratings used for thick ethernet.
A) RG – 11
B) RG – 12
C) RG – 58
D) RG – 59

15. Co-axial cables which are categorized under …….. RG(Radio Government) ratings used for cable TV.
A) RG – 11
B) RG – 12
C) RG – 58
D) RG – 59

16. Which of the following is/are the applications of Co-axial cables.
i) In the DSL line ii) Analog telephone networks iii) Thick and thin Ethernet iv) Cable TV
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
A) All i, ii, iii and iv

17. The different types of BNC (Bayonet-Neill-Concelman) connectors used for Co-axial cable is/are
i) BNC connector ii) BNC-L connector iii) BNC-T connector iv) BNC terminator
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
A) All i, ii, iii and iv

18. The ……. connector is used in Ethernet networks for branching out a cable for connection to a computer or other devices.
A) BNC connector
B) BNC-L connector
C) BNC-T connector
D) BNC terminator

19. The ……. is used at the end of the cable to present the reflection of the signal.
A) BNC connector
B) BNC-L connector
C) BNC-T connector
D) BNC terminator

20. The ……. cable was initially developed as the backbone of analog telephone networks where a single telephone cable would be used to carry more that 10,000 voice channels at a time.
A) Optical Fiber
B) UTP
C) STP
D) Co-axial

Answers

1. B) UTP
2. B) reduce the effect or noise or external interface
3. A) i, ii and iii only
4. C) Category 1 and 2
5. C) 20 Mbps
6. B) 200 Mbps
7. A) i and iii only
8. B) RJ45
9. A) Co-axial
10. B) Twisted, Co-axial, Optical Fiber
11. C) Interference
12. A) True, True, False
13. D) Co-axial
14. A) RG – 11
15. D) RG – 59
16. B) ii, iii and iv only
17. C) i, iii and iv only
18. C) BNC-T connector
19. D) BNC terminator
20. D) Co-axial

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1. In …….. transmission system are widely used in the backbone of the network.
A) Fiber optic
B) Co-axial
C) UTP
D) STP

2. State the following statements are True or False for the applications of optical fiber cables.
i) Optical fiber is now used in telephone systems.
ii) The installation cost of optical fibers is higher than that for the Co-axial cables.
iii) They are used for analog telephone networks.
A) i-True, ii-False, iii-True
B) i-True, ii-True, iii-True
C) i-False, ii-True, iii-False
D) i-True, ii-True, iii-False

3. The sources of light for optical fiber communication …….. provides an unfocused light which hits the core boundaries and gets discussed.
A) ILD
B) LED
C) LOD
D) ELD

4. In optical fiber communication, the ……. can provide a very focused beam that can be used for long-distance communication.
A) ILD
B) LED
C) LOD
D) ELD

5. Which of the following statements are True for step-index and graded-index fibers.
i) The light rays travel in straight lines through the step-index fibers.
ii) The acceptance cone of graded-index fibers is smaller than that of the step-index fiber.
iii) In graded-index fiber, the light rays do not travel in a straight line due to continuous refraction.
A) i and ii only
B) i and iii only
C) ii and iii only
A) All i, ii and iii

6. State True or False for the following statements about single-mode and multi-mode fibers.
i) Multi-mode fiber can have either a step-index or a graded-index profile.
ii) Single-mode fiber is a high-quality fiber for wideband long haul transmission.
iii) The amount of dispersion introduced in single-mode fiber is greater than that introduced in the multi-mode fibers.
A) i-True, ii-False, iii-True
B) i-True, ii-True, iii-True
C) i-False, ii-True, iii-False
D) i-True, ii-True, iii-False

7. …… cable has much lower attenuation and can carry the signal to longer distances without using amplifiers and repeaters in between.
A) Optical fiber
B) Co-axial
C) UTP
D) STP

8. ……. cable is not affected by EMI effects and can be used in areas where high voltage are passing by.
A) Fiber optic
B) Co-axial
C) UTP
D) STP

9. State whether the following statements are True for the characteristics of optical fiber cables.
i) The cost of fiber optic cable is more compared to twisted pair and Co-axial.
ii) The installation of fiber optic cables is easier.
iii) The number of modes that a fiber optic can support does not depend on its length.
A) i and ii only
B) i and iii only
C) ii and iii only
A) All i, ii and iii

10. …….. cable is not affected by potential shifts in the electrical ground, nor does it produce sparks.
A) Fiber optic
B) Co-axial
C) UTP
D) STP

11. Which of the following are the advantages of fiber optic communication over the conventional means of

communication?
i) Small size and lightweight ii) Easy availability and low cost iii) No electrical or electromagnetic interference iv) Large bandwidth
A) i, ii and iii only
B) ii, iii and iv only
C) i, iii and iv only
D) All i, ii, iii and iv

12. Which of the following are the drawbacks of optical fiber?
i) Ground loops are absent ii) The initial cost incurred in high iii) Joining the optical fiber is a difficult job
A) i and ii only
B) i and iii only
C) ii and iii only
A) All i, ii and iii

13. Fiber optic cables use three types of connectors which are
i) SC connector ii) BC connector iii) ST connector iv) LT-RJ connector v) MT-RJ connector
A) i, iii and v only
B) iii, iv an v only
C) i, iii and v only
D) ii, iii and iv only

14. The ……. is used for cable TV, which uses a push/pull locking system.
A) SC connector
B) BC connector
C) ST connector
D) MT-RJ connector

15. The ……. connector is used for connecting a cable to networking devices, which uses a bayonet locking system.
A) SC connector
B) BC connector
C) ST connector
D) MT-RJ connector

16. In …… short circuit between the two conductors is not possible.
A) Optical fiber
B) Co-axial
C) UTP
D) STP

17. In …….. power loss occurs due to absorption, scattering, dispersion and bending.
A) Optical fiber
B) Co-axial
C) UTP
D) STP

18. In …….. EMI is reduced due to shielding.
A) Optical fiber cable
B) Co-axial cable
C) UTP cable
D) STP cable

19. In Co-axial cable, the node capacity per segment is ……..
A) 4o to 110
B) 30 to 90
C) 30 to 100
D) 40 to 100

20. …… is less affected due to the external magnetic field.
A) Optical fiber cable
B) Co-axial cable
C) UTP cable
D) STP cable

Answers

1. A) Fiber optic
2. D) i-True, ii-True, iii-False
3. B) LED
4. A) ILD
5. B) i and iii only
6. D) i-True, ii-True, iii-False
7. A) Optical fiber
8. A) Fiber optic
9. B) i and iii only
10. A) Fiber optic
11. D) All i, ii, iii and iv
12. C) ii and iii only
13. C) i, iii and v only
14. A) SC connector
15. C) ST connector
16. A) Optical fiber
17. A) Optical fiber
18. B) Co-axial cable
19. C) 30 to 100
20. B) Co-axial cable

1. Different ways the unguided signal can travel from the transmitter to receiver is/are
i) Ground wave propagation ii) Sky propagation iii) Space propagation
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

2. In the electromagnetic spectrum, the frequencies in the range 30 kHz to 300 kHz are known as …….
A) Medium Frequencies (MF)
B) Low Frequencies (LF)
C) High Frequencies (HF)
D) Very Low Frequencies (VLF)

3. In electromagnetic spectrum, the frequencies in the range 30MHz to 300MHz are known as ……..
A) High Frequencies (HF)
B) Ultra High Frequencies (UHF)
C) Very High Frequencies (VHF)
D) Super High Frequencies (SHF)

4. In the radio frequency spectrum, the frequency range of very low frequencies will be ……..
A) 100Km to 10Km
B) 10Km to 1Km
C) 10^3Km to 100Km
D) 100M to 10M

5. In radio frequency spectrum, the frequency range of very high frequencies will be ……..
A) 10 Km to 1 Km
B) 100 M to 10 M
C) 10 M to 1 M
D) 1 M to 10 Cm

6. For shortwave transmission, amateur and CB communication ……. spectrum are used.
A) High Frequencies (HF)
B) Ultra-High Frequencies (UHF)
C) Very High Frequencies (VHF)
D) Super High Frequencies (SHF)

7. The application of super-high frequencies(SHF) 3GHz to 30GHz is …
A) Cellular phones
B) TV broadcasting
C) Satellite communication
D) AM radio broadcast

8. The medium frequencies (MF) from 300KHz to 30MHz are used for ……
A) Cellular phones
B) TV broadcasting
C) Satellite communication
D) AM radio broadcast

9. The signal occupying the range between 0.1mm and 700nm(nanometer) are called …….
A) electromagnetic signal
B) infrared signal
C) short signal
D) visible light

10. The various special kinds of communications performed using infrared signals is/are
i) In astronomy to detect stars ii) For guidance in weapon system iii) FM broadcasting iv) TV remote control
A) i, ii and iii only
B) i, ii and iv only
C) ii, iii and iv only
D) i, iii and iv only

11. ……. is a special type of electromagnetic radiation which has wavelength in the range of 0.4 to 0.8 micro meter.
A) electromagnetic signal
B) infrared signal
C) short signal
D) visible light

12. In wireless transmission ……. have the frequencies between 10KHz to 1 GHz.
A) EM waves
B) Microwaves
C) Radiowaves
D) Infrared

13. Radio frequencies below ……. are more suitable for omnidirectional applications.
A) 30GHz
B) 3GHz

C) 1GHz
D) 300MHz

14. Which of the following electromagnetic spectrum includes in radiowaves.
i) High Frequencies (HF) or short waves
ii) Very High Frequency (VHF)
iii) Ultra High Frequency (UHF)
iv) Super High Frequency (SHF)
A) i, ii and iii only
B) i, ii and iv only
C) ii, iii and iv only
D) i, iii and iv only

15. State whether the following statements are True or False for the characteristics of the types of radio waves.
i) The cost of high power single frequency is higher than other
ii) The bandwidth capacity of the spread spectrum is 2-6 Mbps.
iii) The installation of low power single frequency is simple than other
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

16. Different types of radio waves used for computer network applications are ……
i) Low power, single frequency
ii) High power, single frequency
iii) High power, multiple frequency
iv) Spread spectrum
A) i, ii and iii only
B) i, ii and iv only
C) ii, iii and iv only
D) i, iii and iv only

17. …… are basically electromagnetic waves having frequencies between 1 and 300 GHz.
A) EM waves
B) Microwaves
C) Radiowaves
D) Infrared

18. Which of the following statements are correct for the characteristics of terrestrial Microwave systems.
i) It supports a bandwidth from 1 to 10 Mbps
ii) The frequency range used form 4-6 GHz and 21 to 23 GHz
iii) Line of sight requirements make installation easier
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

19. State whether the following statements are True or False about the Microwave link.
i) High maintenance as compared to cables
ii) No, adverse effects such as cable breakage etc.
iii) Repeaters can be used. Hence effect of noise is requced.
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. Which of the following is/are the applications of Microwave Transmission.
i) Point -to-point and point-to-multipoint transmission
ii) In cellular phones
iii) In satellite networks
iv) In the wireless LANs
A) i, ii and iii only
B) i, ii and iv only
C) ii, iii and iv only
D) i, iii and iv only

Answers

1. D) All i, ii, iii and iv
2. B) Low Frequencies (LF)
3. C) Very High Frequencies (VHF)
4. A) 100Km to 10Km
5. C) 10 M to 1 M
6. A) High Frequencies (HF)
7. C) Satellite communication
8. D) AM radio broadcast
9. B) infrared signal
10. B) i, ii and iv only
11. D) visible light
12. B) Microwaves
13. C) 1GHz
14. A) i, ii and iii only
15. D) All i, ii and iii
16. B) i, ii and iv only
17. B) Microwaves

18. A) i and ii only
19. B) ii and iii only
20. C) ii, iii and iv only

---

1. The electromagnetic waves having frequencies from 300GHz to 400GHz are known as …….
A) Medium Waves
B) Short Waves
C) Micro Waves
D) Infrared Waves

2. The electromagnetic waves having frequencies from 3GHz to 30MHz are known as …….
A) Medium Waves
B) Short Waves
C) Micro Waves
D) Infrared Waves

3. The wavelength of the …….. ranges from 850nm and 900nm, where the receivers with good sensitivity are available.
A) visible light
B) infrared light
C) microwaves
D) radio waves

4. The …….. standard developed for an infrared data link(IRDA) provides the standards for the bidirectional communications used in cordless devices such as mice, keyboards, joysticks and handheld computers.
A) IRDA-A
B) IRDA-B
C) IRDA-C
D) IRDA-D

5. The …….. standard developed for an infrared data link (IRDA) provides the standards for the data rates from 115Kbps to 4Mbps with a distance up to 1 meter.
A) IRDA-A
B) IRDA-B
C) IRDA-C
D) IRDA-D

6. The ……. standard developed for an infrared data link provides the standards for the data rates of 75Kbits/sec and the distance range is up to 8 meters.
A) IRDA-A
B) IRDA-B
C) IRDA-C
D) IRDA-D

7. The disadvantage of …… signals is that they cannot penetrate walls or other objects and they are diluted by strong light sources.
A) infrared
B) microwave
C) radio wave
D) long-wave

8. For point to point communication in infrared system …….. depends on the quality of emitted light, its purity, atmospheric conditions and signal obstructions.
A) Bandwidth capacity
B) Node capacity
C) Attenuation
D) EMI

9. For …… communication in infrared system attenuation depends on the quality of emitted light its purity and atmospheric conditions.
A) Point-to-point
B) Point-to-multipoint
C) Broadcast
D) Multi point-to-Multi point

10. State whether the following statements are correct for the applications of infrared.
i) very high data rates can be supported, due to very high bandwidth.
ii) for communication between keyboard, mouse PCs and printers
iii) For cellular communication
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

11. Depending upon the type of application, which of the following is/are the categories of satellites.
i) Communication satellites ii) Remote sensing satellites iii) Weather satellites iv) Astrological satellites
A) i, ii and iii only
B) ii, iii and iv only

C) i, iii and iv only
D) All i, ii, iii and iv

12. Which of the following is/are the typical band of signal frequencies used for satellite communication.
i) C band ii) Ku band iii) Ka-band
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

13. Which of the following is/are the different types of beams used to cover a specific area of the earth.
i) Global beams ii) Spot beams iii) Point-to-Point Spot iv) Use of dual-polarization
A) i, ii and iii only
B) ii, iii and iv only
C) i, ii and iv only
D) All i, ii, iii and iv

14. State whether the following statements are True or False for the characteristics of satellite microwave systems.
i) It uses a frequency range between 4 to 6 GHz
ii) It supports a bandwidth and data rate in the range of 1 to 10 Mbps.
iii) Attenuation depends on frequency, power, antenna size and atmospheric condition.
A) False, True, True
B) False, True, False
C) True, False, False
D) True, False, True

15. For ……. frequencies, the download frequency is 4GHz and up-link frequency is 6GHz.
A) C band
B) Ku band
C) Ka band
D) Ca band

16. The frequencies having downlink frequency 11GHz and up-link frequency 14GHz is known as …… frequency.
A) C band
B) Ku band
C) Ka band
D) Ca band

17. For ……. frequencies, the download frequency is 30GHz and up-link frequency 30GHz.
A) C band
B) Ku band
C) Ka band
D) Ca band

18. The electromagnetic web having the wavelength from 1Km to 100M are known as ……
A) Long Waves
B) Medium Waves
C) Short Waves
D) Micro Waves

19. The electromagnetic wave having the wavelength from 10Km to 1Km are known as …….
A) Long Waves
B) Medium Waves
C) Short Waves
D) Micro Waves

20. In satellite communication, the bandwidth of each transponder is …… and it can handle …….. at a time.
A) 24 MHz, 8 Channels
B) 32 MHz, 10 Channels
C) 36 MHz, 12 Channels
D) 38 MHz, 16 Channels

Answers

1. D) Infrared Waves
2. B) Short Waves
3. B) infrared light
4. C) IRDA-C
5. D) IRDA-D
6. C) IRDA-C
7. A) infrared
8. C) Attenuation
9. C) Broadcast
10. A) i and ii only
11. A) i, ii and iii only
12. D) All i, ii and iii
13. C) i, ii and iv only
14. A) False, True, True
15. A) C band
16. B) Ku band
17. C) Ka-band

18. B) Medium Waves
19. A) Long Waves
20. C) 36 MHz, 12 Channels

---

1) Which of the following is/are the applications of twisted-pair cables ……
A. In the local loop
B. In the DSL line
C. In the ISDN Network
D. All of the above

2) ……. transmission systems are widely used in the backbone of networks.
A. Unshielded Twisted Pair(UTP)
B. Shielded Twisted Pair(STP)
C. Optical Fiber
D. Wireless

3) …….. has much lower attenuation and can carry the signal to longer distances without using amplifiers and repeaters in between.
A. UTP cable
B. STP cable
C. Fiber Optic cable
D. All of the above

4) The major problem(s) suffered for transmission lines on the physical layer is/are ……
A. Attenuation distortion
B. Delay distortion
C. Noise
D. All of the above

5) …… is the loss of energy as the signal propagates outward.
A. Attenuation distortion
B. Delay distortion
C. Noise
D. None of the above

6) ……. is the unwanted energy from sources other than the transmitter.
A. Attenuation distortion
B. Delay distortion
C. Noise
D. Disturbance

7) Which of the following is not the source of the noise?
A. Thermal
B. Magnetic
C. Inter-modulation
D. Cross talk

8) Data rate in data communication depends on which of the following factors.
A. The bandwidth available
B. The level of the signals we use
C. The quality of the channel
D. All of the above

9) …….. is the physical path between the transmitter and receiver.
A. Transmission media
B. Physical media
C. Transmission path
D. Receiving path

10) The key concern in the design of the data transmission system is Data Rate and ……
A. Data Path
B. Data flow
C. Distance
D. Frequencies

11) A …… network is none that establishes a dedicated circuit between nodes and terminals before the users may communicate.
A. Message switching
B. Physical switching
C. circuit switching
D. packet switching

12) Which of the following is not the phase involved in the circuit switching network?
A. Connection start
B. Connection establishment
C. Data transfer
D. Termination

13) …….. is also known as store and forward switching since the messages are stored at intermediate nodes in route to their destinations.
A. Message switching
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14) State True or False for the following characteristics of optical fiber cables.
i) The cost of fiber optic cable is more compared to twisted pair and co-axial.

ii) The installation of fiber optic cable is much easier.
A. i-True, ii-True
B. i-False, ii-True
C. i-True, ii-False
D. i-False, ii-False

15) …… splits traffic data into chunks.
A. Message switching
B. Linear switching
C. circuit switching
D. packet switching

16) …….. is used to optimize the use of the channel capacity available in a network, to minimize the transmission latency and to increase the robustness of communication.
A. Message switching
B. Linear switching
C. circuit switching
D. packet switching

17) The term …… describes the position of the waveform relative to time 0.
A. Frequency
B. Phase
C. Phase Shift
D. Time period

18) If the value of a signal changes over a very short span of time, it's frequency is …….
A. short
B. low
C. high
D. long

19) What is/are the services provided by ISDN?
i. Data applications
ii. Teletext services
iii. Videotext services
iv. Fascimile(FAX)
A. i, ii and iii only
B. ii, iii and iv only
C. i, iii and iv only
D. All i, ii, iii and iv

20) ……. used in telephone network for bi-directional, real-time transfer between computers.
A. Message switching
B. Circuit switching
C. Packet switching
D. Circular switching

ANSWERS:

1) D. All of the above
2) C. Optical Fiber
3) C. Fiber Optic cable
4) D. All of the above
5) A. Attenuation distortion
6) C. Noise
7) B. Magnetic
8) D. All of the above
9) A. Transmission media
10) C. Distance
11) C. circuit switching
12) A. Connection start
13) A. Message switching
14) C. i-True, ii-False
15) D. packet switching
16) D. packet switching
17) B. Phase
18) C. high
19) D. All i, ii, iii and iv
20) B. Circuit switching

---

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C. i-True, ii-False
D. i-False, ii-False

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D. packet switching

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A. Frequency
B. Phase
C. Phase Shift
D. Time period

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…….
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B. low
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D. long

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C. Packet switching
D. Circular switching

ANSWERS:

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3) C. Fiber Optic cable
4) D. All of the above
5) A. Attenuation distortion
6) C. Noise
7) B. Magnetic
8) D. All of the above
9) A. Transmission media
10) C. Distance
11) C. circuit switching
12) A. Connection start
13) A. Message switching
14) C. i-True, ii-False
15) D. packet switching
16) D. packet switching
17) B. Phase
18) C. high
19) D. All i, ii, iii and iv
20) B. Circuit switching

---

1. The transfer mode of a network that involves setting up a dedicated end to end connection is called ……
A) Circuit switching
B) Message switching
C) Telegraph switching
D) Packet switching

2. If …… is used in computer networks, the sending PC first establishes a link with the receiving link.
A) Packet switching
B) Message switching
C) Telegraph switching
D) Circuit switching

3. A telecommunication network is designed primarily for carrying voice signals which consist of ……..
i) access network that connects the subscribers to the telephone exchanges.
ii) hierarchy of telephone exchanges that switch the voice channels.
iii) trunk network that interconnects the telephone exchanges
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

4. …….. does not establish a dedicated path between two communicating devices, where each message is treated as an independent unit and includes its own destination and source address.
A) Packet switching
B) Message switching
C) Telegraph switching
D) Circuit switching

5. In, …… each intermediate device receives the message, stores it, until the next device is ready to receive it and then forwards it to the next device.
A) Packet switching
B) Message switching
C) Telegraph switching
D) Circuit switching

6. The major advantage of …… is that the dedicated transmission channel the computers establish provides a guaranteed data rate.
A) Packet switching
B) Message switching
C) Telegraph switching
D) Circuit switching

7. Which of the following is/are the disadvantage of circuit switching.
i) Dedicated channels require more bandwidth
ii) It takes a long time to establish a connection
iii) There is a delay in the data flow
iv) It cannot be used to transmit any other data even it the channel is free.
A) i, ii and iv only
B) ii, iii and iv only
C) i, iii and iv only
D) i, ii and iii only

8. State whether the following statements are correct for the advantages of message switching.
i) Message switching provides synchronous communication across the time zones
ii) In message switching, the network devices share the data channels.
iii) It reduces network traffic congestion.
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

9. In …….., messages are broken up into packets, each of which includes a header with source, destination and intermediate node address information.
A) Packet switching
B) Message switching
C) Telegraph switching
D) Circuit switching

10. In …… if a certain link in the network goes down during the transmission, the remaining packets can be sent through another route.
A) Circuit switching
B) Message switching
C) Telegraph switching
D) Packet switching

11. In …… , all the packets travel through t he logical connection established between the sending device and receiving device.
A) Circuit switching
B) Message switching
C) Virtual circuit packet switching
D) Datagram packet switching

12. …….. increases the bandwidth of the network by allowing many devices to communicate through the same network channel.
A) Circuit switching
B) Message switching
C) Virtual circuit packet switching
D) Datagram packet switching

13. Which of the following is/are the disadvantages of virtual circuit packet switching.
i) The switching node requires more processing power because the packet switching protocols are more complex.
ii) A switching node unable to route the packet as and when required.
iii) Packets are more easily lost on their route, hence sequence numbers are required to identify the missing packets.
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

14. Email and Hop-by-Hop Telex forwarding are examples of …….. systems.
A) Circuit switching
B) Message switching
C) Virtual circuit packet switching
D) Datagram packet switching

15. …….. is also known as store-and-forward switching since the messages are stored at intermediate nodes in route to their destinations.
A) Circuit switching
B) Message switching
C) Virtual circuit packet switching
D) Datagram packet switching

16. …… networks do not require a circuit to be established and allow many pairs of nodes to communicate almost simultaneously over the same channel.
A) Circuit switching
B) Message switching

C) Telegraph switching
D) Packet switching

17. …….. is used to optimize the use of the channel capacity available in a network, to minimize the transmission latency and to increase the robustness of communication.
A) Circuit switching
B) Message switching
C) Telegraph switching
D) Packet switching

18. The most well-known use of packet switching is the ……
A) PSTN
B) Email
C) Internet
D) Hop-by-Hop Telex

19. Which of the following is/are the advantages of datagram packet switching.
i) Here the call setup phase is avoided, thus if a station wishes to send only one or few packets datagram delivery will be quicker.
ii) It is more primitive and flexible
iii) It is inherently more reliable, if a node fails, subsequent packets may find an alternate route
A) i and ii only
B) ii and iii only
C) i and iii only
D) All i, ii and iii

20. The telephone network of bi-directional real-time transfer between computer is the application of …….. network.
A) Circuit switching
B) Message switching
C) Telegraph switching
D) Packet switching

Answers

1. A) Circuit switching
2. D) Circuit switching
3. D) All i, ii and iii
4. B) Message switching
5. B) Message switching
6. D) Circuit switching
7. A) i, ii and iv only
8. C) i and iii only
9. A) Packet switching
10. D) Packet switching
11. C) Virtual circuit packet switching
12. C) Virtual circuit packet switching
13. C) i and iii only
14. B) Message switching
15. B) Message switching
16. D) Packet switching
17. D) Packet switching
18. C) Internet
19. D) All i, ii and iii
20. A) Circuit switching

NETWORK LAYERS OF TCP/IP AND OSI MODEL

1) TCP is a ……. protocol.
A. stream-oriented
B. message-oriented
C. block-oriented
D. packet-oriented

2) Which of the following is not the layer of TCP/IP protocol.
A. Physical layer
B. link layer
C. network layer
D. transport layer.

3) TCP groups a number of bytes together into a packet called a ….
A. user datagram
B. segment
C. datagram
D. packet

4) The ……. of TCP/IP protocol is responsible for figuring out how to get data to its destination.
A. application layer
B. link layer
C. network layer
D. transport layer.

5) TCP is a(n) …….. transport protocol.
A. protocol delivery
B. reliable
C. best-effort delivery
D. effortless delivery

6) …… is the protocol that hides the underlying physical network by creating a

virtual network view.
A. Internet Protocol(IP)
B. Internet Control Message Protocol(ICMP)
C. Address Resolution Protocol(ARP)
D. Bootstrap Protocol(BOOTP)

7) To use the services of UDP, we need …… socket addresses.
A. four
B. two
C. three
D. four

8) Which of the following is not the name of Regional Internet Registries(RIR) to administer the network number portion of IP address.
A. American Registry for Internet Numbers(ARIN)
B. Reseaux IP Europeans(RIPE)
C. Europeans Registry for Internet Numbers(ERIN)
D. Asia Pacific Network Information Center(APNIC)

9) UDP packets are called …….
A. user datagrams
B. segments
C. frames
D. packets

10) …… addresses use 21 bits for the and 8 bits for the portion of the IP address for TCP/IP network.
A. Class A
B. Class B
C. Class C
D. Class D

11) UDP packets have a fixed-size header of ……. bytes.
A. 16
B. 8
C. 32
D. 64

12) ……. messages are never sent in response to datagrams with a broadcast or a multicast destination address.
A. ICMP
B. ARP
C. IP
D. BOOTP

13) TCP assigns a sequence number to each segment that is being sent. The sequence number for each segment is the number of the ……. byte carried in that segment.
A. first
B. last
C. middle
D. zero

14) ……. is responsible for converting the higher-level protocol address (IP addresses) to physical network addresses.
A. Internet Protocol(IP)
B. Internet Control Message Protocol(ICMP)
C. Address Resolution Protocol(ARP)
D. Bootstrap Protocol(BOOTP)

15) UDP and TCP are both …… layer protocols.
A. data link
B. network
C. transport
D. interface

16) …….. is a process-to-process protocol that adds only port addresses, checksum error control, and length information to the data from the upper layer.
A. TCP
B. UDP
C. IP
D. ARP

17) Which of the following functions does UDP perform?
A. Process-to-process communication
B. Host-to-host communication
C. End-to-end reliable data delivery
D. Interface-to-interface communication.

18) A port address in TCP/IP is ……bits long.
A. 32
B. 48
C. 16
D. 64

19) When the IP layer of a receiving host receives a datagram, …..
A. delivery is complete
B. a transport layer protocol takes over
C. a header is added
D. a session layer protocol takes over

20) TCP/IP is a ……. hierarchical protocol suite developed before the OSI model.
A. seven-layer
B. five-layer
C. six-layer
D. four-layer

ANSWERS:

1) A. stream-oriented
2) A. Physical layer
3) B. segment
4) C. network layer
5) B. reliable
6) A. Internet Protocol(IP)
7) B. two
8) C. Europeans Registry for Internet Numbers(ERIN)
9) A. user datagrams
10) C. Class C
11) B. 8
12) A. ICMP
13) A. first
14) C. Address Resolution Protocol(ARP)
15) C. transport
16) B. UDP
17) A. Process-to-process communication
18) C. 16
19) B. a transport layer protocol takes over
20) B. five-layer

---

1) UDP needs the …….. address to deliver the user datagram to the correct application process
A. port
B. application
C. internet
D. intranet

2) The …….. was originally developed as a mechanism to enable disk-less hosts to be remotely booted over a network as workstations, routers, terminal concentrators and so on.
A. ICMP
B. BOOTP
C. UDP
D. ARP

3) Which of the following does UDP guarantee?
A. Flow control
B. Connection-oriented delivery
C. Data control
D. None of the above

4) ……. provides a framework for passing configuration information to hosts on a TCP/IP network.
A. Dynamic Host Configuration Protocol(DHCP)
B. Address Resolution Protocol(ARP)
C. Internet Protocol(IP)
D. Internet Control Message Protocol(ICMP)

5) The source port address on the UDP user datagram header defines ……
A. the sending computer
B. the receiving computer
C. the process running on the sending computer
D. the process running on the receiving computer

6) The mechanisms supported by DHCP for IP address allocation on a TCP/IP network is/are …
A. Automatic allocation
B. Dynamic allocation
C. Manual allocation
D. All of the above

7) UDP is called a ……. transport protocol.
A. connection-oriented, unreliable
B. connectionless, reliable
C. connectionless, unreliable
D. connection, reliable

8) DHCP in TCP/IP network assigns an IP address for a limited period of time. Such a network address is called a ……
A. lease
B. limited network
C. timed network
D. assigned network

9) UDP does not add anything to the services of IP except for providing ……. communication.
A. node to node
B. process to process
C. host to host
D. interface to interface

10) The use of …… allows centralized configuration of multiple clients.
A. ICMP
B. BOOTP
C. UDP
D. ARP

11) UDP is an acronym for ……
A. User Delivery Protocol
B. User Datagram Procedure
C. User Datagram Protocol
D. User Delivery Procedure

12) …… is where users typically interact with the TCP/IP network.
A. Link layer
B. Network layer
C. Transport layer
D. Application layer

13) The local host and the remote host are defined using IP addresses. To define the processes, we need second identifiers called ……
A. UDP addresses
B. transport addresses
C. port addresses
D. TCP addresses

14) The ……. is responsible for communicating with the actual network hardware.
A. Link layer
B. Network layer
C. Transport layer
D. Application layer

15) UDP packets are encapsulated in …….
A. an Ethernet frame
B. a TCP segment
C. an IP datagram
D. an Ethernet packets

16) …… is the protocol suite for the current Internet.
A. TCP/IP
B. NCP
C. UDP
D. ACM

17) UDP uses …….. to handle outgoing user datagrams from multiple processes on one host.
A. flow control
B. multiplexing
C. demultiplexing
D. data control

18) ……. provides full transport layer services to applications.
A. TCP
B. UDP
C. IP
D. ARP

19) UDP uses …… to handle incoming user datagrams that go to different processes on the same host.
A. flow control
B. multiplexing
C. demultiplexing
D. data control

20) In the sending computer, UDP receives a data unit from the …… layer.
A. application
B. transport
C. IP
D. interface

ANSWERS:

1) A. port
2) B. BOOTP
3) D. None of the above
4) A. Dynamic Host Configuration Protocol(DHCP)
5) C. the process running on the sending computer
6) D. All of the above
7) C. connectionless, unreliable
8) A. lease
9) B. process to process
10) B. BOOTP
11) C. User Datagram Protocol
12) D. Application layer
13) C. port addresses
14) A. Link layer
15) C. an IP datagram
16) A. TCP/IP
17) B. multiplexing
18) A. TCP
19) C. demultiplexing
20) A. application

---

1. The …….. layer links the network support layers and the user support layers.

A. transport
B. network
C. data link
D. session

2) The ……. layer changes bits into electromagnetic signals.
A. physical
B. data link
C. transport
D. network

3) The ……. layer coordinates the functions required to transmit a bitstream over a physical medium.
A. transport
B. network
C. data link
D. physical

4) Which of the following is an application layer service?
A. remote log-in.
B. file transfer and access.
C. mail service
D. all of the above

5) The …… layer is responsible for the source-to-destination delivery of a packet across multiple network links.
A. transport
B. network
C. data link
D. session

6) The ……. layer is the layer closest to the transmission medium.
A. physical
B. data link
C. network
D. transport

7) The ……..layer is responsible for the process-to-process delivery of the entire message.
A. transport
B. network
C. data link
D. physical

8) Mail services are available to network users through the ……. layer.
A. data link
B. physical
C. transport
D. application

9) The …….. layer establishes, maintains, and synchronizes the interactions between communicating devices.
A. transport
B. network
C. session
D. physical

10) The ……. layer lies between the network layer and the application layer.
A. physical
B. data link
C. transport
D. session

11) The ……. layer ensures interoperability between communicating devices through the transformation of data into a mutually agreed-upon format.
A. transport
B. network
C. data link
D. presentation

12) Transmission media lies below the ……layer.
A. physical
B. network
C. transport
D. application

13) The …….. layer enables users to access the network.
A. session
B. application
C. data link
D. physical

14) Circuit switching takes place at the ……. layer.
A. data link
B. physical
C. network
D. transport

15) The …… layer is responsible for moving frames from one node to the next.
A. physical
B. data link
C. transport
D. session

16) The routing processor of a router performs the …….. layer functions of the router.
A. physical and data link
B. network
C. transport
D. session

17) The ……. layer adds a header to the packet coming from the upper layer that includes the logical address of the sender and receiver.
A. physical
B. data link
C. network
D. transport

18) Network layer lies on ……. layer.
A. physical
B. data link
C. network
D. transport

19) The ……..layer is responsible for the delivery of a message from one process to another.
A. physical
B. transport
C. network
D. session

20) The data link layer takes the packet it gets from the network layer and encapsulates them into ……
A. cells
B. frames
C. packet
D. trailer

ANSWERS:

1) A. transport
2) A. physical
3) D. physical
4) D. All of the above
5) B. network
6) A. physical
7) A. transport
8) D. application
9) C. session
10) C. transport
11) D. presentation
12) A. physical
13) B. application
14) B. physical
15) B. data link
16) B. network
17) C. network
18) A. physical
19) B. transport
20) B. frames

---

1) In a/an …….. of DNS resolver, instead of supplying a name and asking for an IP address, the DNS client provides the IP address and requests the corresponding hostname.
A. Recursive queries
B. Iterative queries
C. Reverse queries
D. Inverse queries

2) For each resolved query, the DNS resolver caches the returned information for a time that is specified in each resource record in the DNS response. This is known as ……
A. Positive caching
B. Time To Live
C. Negative Caching
D. Reverse Caching

3) As originally defined in RFC 1134, …….. negative caching is the caching of failed name resolutions.
A. Positive caching
B. Time To Live
C. Negative Caching
D. Round Robin Load Balancing

4) …… can reduce response times for names that DNS cannot resolve for both the DNS client and DNS servers during an iterative query process.
A. Positive caching
B. Time To Live
C. Negative Caching
D. Round Robin Load Balancing

5) The amount of time in seconds to cache the record data is referred to as the ……
A. Time To Cache
B. Time To Live
C. Time For Record

D. Time To Save

6) Which of the following issues arises, when multiple resource records for the same resource record type exist.
A. For the DNS server, how to order the resource records in the DNS Name Query Response message.
B. For the DNS client, how to choose a specific resource record in the DNS Name Query Response message.
C. Both of the above
D. None of the above.

7) To address the issues arises when multiple resource records for the same resource record type exist, RFC 1794 describes a mechanism named …….. to share and distribute loads for network resources.
A. Positive caching
B. Time To Live
C. Negative Caching
D. Round Robin Load Balancing

8) A …… gets the data for its zones from locally stored and maintained files.
A. primary name server
B. secondary name server
C. ternary name server
D. primary name client

9) A ……. gets the data for its zones across the network from another name server.
A. primary name server
B. secondary name server
C. ternary name server
D. primary name client

10) The process of obtaining zone information across the network is referred to as a ……
A. zone obtaining
B. zone transfer
C. zone information
D. zone extracting

11) Which of the following is/are the reasons to have secondary name servers within an enterprise network.
A. Redundancy
B. Remote locations
C. Load distribution
D. All of the above

12) The source of the zone information for a secondary name server is referred to as a …….
A. Name server
B. Primary Name Server
C. Master Name Server
D. Secondary Name Server

13) In ……., when a name server receives a DNS query that it cannot resolve through its own zone files, it sends a recursive query to its forwarder.
A. exclusive mode
B. non-exclusive mode
C. caching mode
D. zonal mode

14) Which of the following is not the work done by a name server using a forwarder in exclusive mode, when attempting to resolve a name.
A. Checks its local cache
B. Checks its zone files
C. Sends a recursive query to a forwarder
D. Attempts to resolve the name through iterative queries to other DNS servers.

15) In ……., name servers rely on the name-resolving ability of the forwarders.
A. exclusive mode
B. non-exclusive mode
C. caching mode
D. zonal mode

16) Name servers in …….. make no attempt to resolve the query on their own if the forwarder is unable to satisfy the request.
A. exclusive mode
B. non-exclusive mode
C. caching mode
D. zonal mode

17) …….. are DNS servers that only perform queries, cache the answers, and return the results.

A. Querying the only server
B. Results only server
C. Caching the only server
D. Information only server

18) In DNS resource records, …… indicate primary and secondary servers for the zone specified in the SOA resource record, and they indicate the servers for any delegated zones.
A. SOA records
B. A records
C. MX records
D. NS records

19) In DNS resource records,…… specifies a mail exchange server for a DNS domain name.
A. SRV
B. MX
C. PTR
D. NS

20) In DNS resource records, ……. specifies the IP addresses of servers of a specific service, protocol, and DNS domain.
A. SRV
B. MX
C. PTR
D. NS

Answers:

1) C. Reverse queries
2) A. Positive caching
3) C. Negative Caching
4) C. Negative Caching
5) B. Time To Live
6) C. Both of the above
7) D. Round Robin Load Balancing
8) A. primary name server
9) B. secondary name server
10) B. zone transfer
11) D. All of the above
12) C. Master Name Server
13) B. non-exclusive mode
14) D. Attempts to resolve the name through iterative queries to other DNS servers.
15) A. exclusive mode
16) A. exclusive mode
17) C. Caching only server
18) D. NS records
19) B. MX
20) A. SRV

---

1) In the MIME header field, ……. is a world unique value identifying the content of this part of this message.
A. content-type
B. content-transfer-encoding
C. content-description
D. content-id

2) The Post Office Protocol, version 3, is a standard protocol with STD number 53 and it is described in …..
A. RFC 1939
B. RFC 0937
C. RFC 2821
D. RFC 2822

3) …….. is an electronic mail protocol with both client and server functions.
A. SMTP
B. MIME
C. POP
D. TCP

4) In the authentication state of the POP3 server, …… is used to specify a mechanism by which both authentication and data protection can be provided.
A. USER
B. PASS
C. APOP
D. AUTH

5) In the transaction state of POP3 commands, ……. retrieve the number of messages and the total size of the messages.
A. STAT
B. LIST
C. RETR
D. DELE

6) A MIME compliant message must contain a header field with the …….. verbatim text.
A. MIME-version:1.0
B. MIME-version:1.1
C. MIME-version:2.0
D. MIME-version:2.1

7) In …… name space, a name is assigned to an address. It is a sequence of characters without structure.
A. hierarchical
B. sequential
C. flat
D. addressed

8) The main disadvantage of a …… name space is that it cannot be used in a large system such as the internet because it may be centrally controlled to avoid ambiguity and duplication.
A. hierarchical
B. sequential
C. flat
D. addressed

9) The …… protocol defines a set of messages sent over either User Datagram Protocol(UDP) port53 or Transmission Control Protocol(TCP) port53.
A. Name space
B. DNS
C. Domain space
D. Zone transfer

10) Primary specifications for DNS are defined in which of the following Request for Comments(RFCs)?
A. 974
B. 1034
C. 1035
D. All of the above

11) Which of the following is/are the components of DNS defined by RFC 1034?
A. The domain namespace and resource records
B. Name servers
C. Resolvers
D. All of the above

12) …… are records in the DNS database that can be used to configure the DNS database server or to contain information about different types of process client queries.
A. Domain namespace
B. Resource records
C. Name servers
D. Resolvers

13) …….. store resource records and information about the domain tree structure and attempt to resolve received client queries.
A. Domain namespace
B. DNS Names
C. Name servers
D. Resolvers

14) …… are programs that run on DNS clients and DNS servers and that create queries to extract information from name servers.
A. Domain namespace
B. Resource records
C. Name servers
D. Resolvers

15) …….. have a very specific structure, which identifies the location of the name in the DNS namespace.
A. Domain namespace
B. DNS Names
C. Name servers
D. Resolvers

16) A ……. is a DNS domain name that has been constructed from its location relative to the root of the namespace is known as the root domain.
A. Fully Qualified Domain Name(FQDN)
B. Fully Structured Domain Name(FSDN)
C. Fully Constructed Domain Name(FCDN)
D. Fully Rooted Domain Name(FRDN)

17) State whether the following statements are True or False for the attributes of Fully Qualified Domain Name(FQDN).
i) FQDN is case-sensitive
ii) A period character separates each name.
iii) The entire FQDN can not be any more than 255 characters long.
A. i-True, ii-True, iii-False
B. i-True, ii-False, iii-True
C. i-False, ii-True, iii-True
D. i-False, ii-True, iii-False

18) A …… is a contiguous portion of a domain of the DNS namespace whose database records exist and managed in a particular DNS database file stored on one or multiple DNS servers.
A. Subdomain

B. Zone
C. Sub DNS
D. Sub zone

19) In a/an …….. of DNS resolver, the queried name server is requested to respond with the requested data or with an error stating that data of the requested type or the specified domain name does not exist.
A. Recursive queries
B. Iterative queries
c. Reverse queries
D. Inverse queries

20) In the MIME header field, …… is a plain text description of the object within the body, which is useful when the object is not human-readable.
A. content-type
B. content-transfer-encoding
C. content-description
D.content-id

Answers:

1) D. content-id
2) A. RFC 1939
3) C. POP
4) D. AUTH
5) A. STAT
6) A. MIME-version:1.0
7) C. flat
8) C. flat
9) B. DNS
10) D. All of the above
11) D. All of the above
12) B. Resource records
13) C. Name servers
14) D. Resolvers
15) B. DNS Names
16) A. Fully Qualified Domain Name(FQDN)
17) C. i-False, ii-True, iii-True
18) B. Zone
19) A. Recursive queries
20) C. content-description

---

1) Which of the following is/are the important applications of the application layer?
A. Electronic mail
B. World Wide Web
C. USENET
D. All of the above

2) The TCP/IP ……. corresponds to the combined session, presentation, and application layers of the OSI model.
A. session layer
B. the presentation layer
C. application layer
D. None of the above

3) The ……. protocol is based on end-to-end delivery.
A. SMTP
B. TCP
C. IP
D. SCTP

4) The well-known port of the SMTP server is ……..
A. 110
B. 25
C. 50
D. 20

5) In the SMTP header field, ……. is a summary of the message being sent which is specified by the sender.
A. Reply-to
B. Return-path
C. Subject
D. From

6) In the SMTP herder field, ……. is added by the final transport system that delivers the mail.
A. Reply-to
B. Return-path
C. Subject
D. From

7) In SMTP mail transaction flow, the sender SMTP establishes a TCP connection with the destination SMTP and then waits for the server to send a …….
A. 220 service ready message
B. 421 service not available message
C. Both of the above
D. None of the above

8) In SMTP mail transaction flow, ……. is sent, to which the receiver will identify itself by sending back its domain name.
A. HELO
B. MAIL FROM

C. RCPT TO
D. DATA

9) …… is a command-line tool designed for most UNIX-like operating systems, which does not define a method of transferring mail, but rather acts as a client/server that supports multiple mail protocols.
A. Receive mail
B. Sendmail
C. MIME
D. POP

10) Which of the following is/are the components of Sendmail?
A. Mail user agent(MUA)
B. Mail transfer agent(MTA)
C. Mail delivery agent(MDA)
D. All of the above

11) The …… is the interface through which a user can read and send mail.
A. Mail user agent(MUA)
B. Mail transfer agent(MTA)
C. Mail delivery agent(MDA)
D. Mail send agent(MSA)

12) The …… acts like a mail router, accepting messages from both MTAs and MUAs.
A. Mail user agent(MUA)
B. Mail transfer agent(MTA)
C. Mail delivery agent(MDA)
D. Mail send agent(MSA)

13) ……. uses a queuing system to manage inbound and outbound mail.
A. Receive mail
B. Sendmail
C. MIME
D. POP

14) The sender SMTP establishes a TCP connection with the destination SMTP and then waits for the server to send a …… service ready message.
A. 421
B. 320
C. 220
D. 120

15) …… is limited to 7-bit ASCII text, with a maximum line length of 1000 characters.
A. SMTP
B. MIME
C. POP
D. MTA

16) A …….. message is one which can be routed through any number of networks that are loosely compliant with RFC2821 or are capable of transmitting RFC2821 messages.
A. SMTP
B. MIME
C. POP
D. MTA

17) There are ……. the number of standard content types in MIME.
A. 5
B. 7
C. 9
D. 4

18) In the MIME header field, …… describes how the object within the body is to be interpreted.
A. content-type
B. content-transfer-encoding
C. content-description
D. content-id

19) In the MIME header field, …… describes how the object within the body was encoded in order that it be included in the message using a mail-safe form.
A. content-type
B. content-transfer-encoding
C. content-description
D. content-id

20) In a/an …… of DNS resolver, the queried name server can return the best answer it currently has back to the DNS resolver.
A. Recursive queries
B. Iterative queries
C. Reverse queries
D. Inverse queries

Answers:

1) D. All of the above
2) C. application layer
3) A. SMTP
4) B. 25
5) C. Subject
6) B. Return-path
7) C. Both of the above
8) A. HELO
9) B. Sendmail
10) D. All of the above
11) A. Mail user agent(MUA)
12) B. Mail transfer agent(MTA)
13) B. Sendmail
14) C. 220
15) A. SMTP
16) B. MIME
17) B. 7
18) A. content-type
19) B. content-transfer-encoding
20) B. Iterative queries

---

1) The ……. is responsible for end to end delivery, segmentation, and concatenation.
A. Physical layer
B. Data Link layer
C. Network layer
D. Transport layer

2) ……. needs ports or service access points.
A. Physical layer
B. Data Link layer
C. Network layer
D. Transport layer

3) The task of …… is to provide reliable, cost-effective transport of data from the source machine to the destination machine.
A. Network Layer
B. Transport Layer
C. Presentation Layer
D. Application Layer

4) The hardware and/or software within the transport layer which does the work of making use of the services provided by the network layer is called as ……
A. transport media
B. transport device
C. transport entity
D. network transporter

5) ……. measures the number of bytes of user data transferred per second, measured over some time interval. It is measured separately for each direction.
A. Throughput
B. Transit delay
C. Protection
D. Resilience

6) …… is the time between a message being sent by the transport user on the source machine and its being received by the transport user on the destination machine.
A. Throughput
B. Transit delay
C. Protection
D. Resilience

7) The time difference between the instant at which a transport connection is requested and the instant at which it is confirmed is called……..
A. Connection establishment delay
B. Transit delay
C. Protection delay
D. Priority delay

8) The message sent from transport entity to transport entity is called as …….
A. transport data unit
B. transport display data unit
C. transport protocol data unit
D. transport protocol display unit

9) …….. are designed for the protocols like ICMP or OSPF, because these protocols do not use either stream packets or datagram sockets.
A. Berkeley sockets
B. Stream sockets
C. Datagram sockets
D. Raw sockets

10) ……. is designed for the connectionless protocol such as User Datagram Protocol(UDP).
A. Berkeley socket
B. Stream socket
C. Datagram socket
D. Raw socket

11) …… is designed for the connection oriented protocol such as Transmission Control Protocol(TCP).
A. Berkeley socket
B. Stream socket
C. Datagram socket
D. Raw socket

12) …… is used to implement the transport layer services between the two transport entities.
A. Transport service
B. Transport protocol
C. Transport address
D. Transport control

13) Which of the following is/are the tasks of transport protocols.
A. Error control
B. Sequencing
C. Flow control
D. All of the above

14) The internet uses universal port numbers for services and these numbers are called as …….
A. Well known port numbers
B. Fixed port numbers
C. Standard port numbers
D. Ephemeral port numbers

15) In the internet model, the client program defines itself with a port number that is chosen randomly. This number is called…….
A. Well known port numbers
B. Fixed port numbers
C. Standard port numbers
D. Ephemeral port numbers

16) The port numbers …….. are known as well known ports and they are reserved for standard circuits.
A. below 1024
B. above 1024
C. below 2048
D. below 512

17) In the TCP segment header, ……. is a 32-bit number identifying the current position of the first data byte in the segment within the entire byte stream for the TCP connection.
A. serial number
B. current number
C. sequence number
D. acknowledgement number

18) In the TCP segment header, ……. is a 32-bit number identifying the next data byte the sender expects from the receiver.
A. serial number
B. current number
C. sequence number
D. acknowledgment number

19) A …….. is a special type of file handle, which is used by a process to request network services from the operating system.
A. socket
B. handler
C. requester
D. protocol

20) …….. is an optional 16-bit one's complement of the one's complement sum of a pseudo-IP header, the UDP header, and the UDP data.
A. Congestion
B. Checksum
C. Pseudosum
D. Headersum

ANSWERS:

1) D. Transport layer
2) D. Transport layer
3) B. Transport Layer
4) C. transport entity
5) A. Throughput
6) B. Transit delay
7) A. Connection establishment delay
8) C. transport protocol data unit
9) D. Raw sockets
10) C. Datagram socket
11) B. Stream socket
12) B. Transport protocol
13) D. All of the above
14) A. Well known port numbers
15) D. Ephemeral port numbers
16) A. below 1024
17) C. sequence number
18) D. acknowledgment number
19) A. socket
20) B. Checksum

1) The …… provides two well-defined classes of services, namely connectionless and connection-oriented services to the numerous nodes or hosts communicating through the subnet.
A. physical layer
B. data link layer
C. network layer
D. transport layer

2) In computer networking the term ……. refers to selecting paths in a computer network along which to send data.
A. routing
B. inter-networking
C. internal organization
D. congestion control

3) …… Routing algorithms do not base their routing decisions on measurements or estimates of the current traffic and topology.
A. Static or Non-adaptive
B. Static or adaptive
C. Dynamic or Non-adaptive
D. Dynamic or adaptive

4) ……. Routing algorithms, in contrast, change their routing decisions to reflect changes in topology and usually the traffic as well.
A. Static or Non-adaptive
B. Static or adaptive
C. Dynamic or Non-adaptive
D. Dynamic or adaptive

5) …….. is also a static algorithm in which every incoming packet is sent out on every outgoing line except the one it arrives on.
A. Shortest Path Algorithm
B. Flooding
C. Distance Vector Routing
D. Hierarchical Routing

6) ……. is basically a vector that keeps track of the best-known distance to each destination and which line to use to get there.
A. Shortest Path Algorithm
B. Flooding
C. Distance Vector Routing
D. Hierarchical Routing

7) In addresses for ……. networks, the first 16 bits specify a particular network, and the last 16 bits specify a particular host.
A. class A
B. class C
C. class B
D. class D

8) In ……., the routers are divided into regions. Each router knows all details about how to route packets to destinations within its own region.
A. Shortest Path Algorithm
B. Link state Routing
C. Distance Vector Routing
D. Hierarchical Routing

9) In ……., each node uses as its fundamental data a map of the network in the form of a graph.
A. Shortest Path Algorithm
B. Link state Routing
C. Distance Vector Routing
D. Hierarchical Routing

10) …… protocols are simple and efficient in small networks and require little if any management.
A. Shortest Path Algorithm
B. Link state Routing
C. Distance Vector Routing
D. Hierarchical Routing

11) In …….. routing algorithm, each router knows all details about how to route packets to destinations within its own region. But does not have any idea about the internal structure of other regions.
A. Shortest Path Algorithm
B. Link state Routing
C. Distance Vector Routing
D. Hierarchical Routing

12) The set of optimal routers from source to a given destination from a tree rooted at the destination called a …….. tree.
A. sink
B. optimal
C. rooted
D. routing

13) ……. is a simple mathematical computation used to check for bit-level errors in the IPV4 header.
A. Identification
B. Protocol
C. Checksum
D. Time-to-Live(TTL)

14) The number of network segments on which the datagram is allowed to travel before a router should discard it is called …….
A. Identification
B. Protocol
C. Checksum
D. Time-to-Live(TTL)

15) ……. is an identifier of the upper-layer protocol to which the IPV4 payload must be passed.
A. Identification
B. Protocol
C. Checksum
D. Time-to-Live(TTL)

16) The IPV4 address of the intermediate or final destination of the IPV4 packet is called …….
A. Source IP Address
B. Destination IP Address
C. Identification
D. Checksum

17) ……. type of IPV4 address is assigned to all network interfaces located on a subnet, used for one-to-everyone on a subnet communication.
A. Unicast
B. Multicast
C. Broadcast
D. Anycast

18) The …… header field of IPV6 indicates the number of likes on which the packet is allowed to travel before being discarded by a router.
A. Source Address
B. Destination Address
C. Next Header
D. Hop Limit

19) …… is an identifier for either the IPV6 extension header immediately following the IPV6 header or an upper-layer protocol, such as ICMPv6, TCP or UDP.
A. Source Address
B. Destination Address
C. Next Header
D. Hop Limit

20) The internet addresses are …… bits in length in IPV4 addressing scheme.
A. 16
B. 64
C. 32
D. 48

ANSWERS:

1) C. network layer
2) A. routing
3) A. Static or Non-adaptive
4) D. Dynamic or adaptive
5) B. Flooding
6) C. Distance Vector Routing
7) C. class B
8) D. Hierarchical Routing
9) B. Link-state Routing
10) C. Distance Vector Routing
11) D. Hierarchical Routing
12) A. sink
13) C. Checksum
14) D. Time-to-Live(TTL)
15) B. Protocol
16) B. Destination IP Address
17) C. Broadcast
18) D. Hop Limit
19) C. Next Header
20) C. 32

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1) The ……. layer provides a well-defined service interface to the network layer, determining how the bits of the physical layer are grouped into frames.
A. Data Link
B. Physical
C. Network
D. Session

2) The service primitives provide a way for the data link layer on the requesting side to learn whether the request was successfully carried out.
A. Request
B. Indication

C. Response
D. Confirm

3) The different types of services provided by the data link layer is/are …
A. Unacknowledged connectionless service
B. Acknowledged connectionless service
C. Acknowledged connection-oriented service
D. All of the above.

4) ……. is used by the network layer to ask the data link layer to do something.
A. Request
B. Indication
C. Response
D. Confirm

5) In …… the source machine sends independent frames to the destination machine without having the destination machine acknowledge them.
A. Unacknowledged connectionless service
B. Acknowledged connectionless service
C. Acknowledged connection oriented service
D. Unacknowledged connection oriented service

6) …….. is the most sophisticated service provided by the data link layer to the network layer. The source and destination machines establish a connection before any data transfer takes place.
A. Unacknowledged connectionless service
B. Acknowledged connectionless service
C. Acknowledged connection oriented service
D. Unacknowledged connection oriented service

7) In ……. , there are still no connections used, but each frame sent is individually acknowledged.
A. Unacknowledged connectionless service
B. Acknowledged connectionless service
C. Acknowledged connection-oriented service
D. Unacknowledged connection-oriented service

8) …… is used to indicate to the network layer that an event has happened, for example, establishment or release of a connection.
A. Request
B. Indication
C. Response
D. Confirm

9) ……. is used on the receiving side by the network layer to reply to a previous indication.
A. Request
B. Indication
C. Response
D. Confirm

10) In ……. we are looking only to see if any error has occurred. The answer is a simple yes or no.
A. error searching
B. error detection
C. error correction
D. error transmission

11) In …….. we need to know the exact number of bits that are corrected and more importantly, their location in the message.
A. error searching
B. error detection
C. error correction
D. error transmission

12) …… is the process in which the receiver tries to guess the message by using redundant bits.
A. Forward error correction
B. Backward error correction
C. Transmission
D. Retransmission

13) …….. is the technique in which the receiver detects the occurrence of an error and asks the sender to resend the message.
A. Forward error correction
B. Backward error correction
C. Transmission
D. Retransmission

14) In block coding, we divide our message into blocks, each of k bits, called ……..
A. Dataword
B. Generator
C. Codeword
D. Checker

15) …… in the data link layer separates a message from one source to a destination, or from other messages to other destinations, by adding a sender address

and a destination address.
A. Transforming
B. Framing
C. Separating
D. Messaging

16) In ……., there is no need for defining the boundaries of the frames; the size itself can be used a delimiter.
A. Standard Size Framing
B. Fixed Size Framing
C. Variable Size Framing
D. Constant Size Framing

17) …… 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

18) Which of the following is/are the methods used for carrying out framing.
A. Character count
B. Starting and ending characters, with character stuffing.
C. Starting and ending flags with bit stuffing.
D. All of the above

19) In ……., the sender sends one frame, stops until it receives confirmation from the receiver, and then sends the next frame.
A. stop and wait protocol
B. simplest protocol
C. sliding window protocol
D. High level Data Link Control Protocol(HDLC)

20) In …… , the sliding window is an abstract concept that defines the range of sequence numbers that is the concern of the sender and receiver.
A. stop and wait protocol
B. simplest protocol
C. sliding window protocol
D. High level Data Link Control Protocol(HDLC)

Answers:

1) A. Data Link
2) D. Confirm
3) D. All of the above
4) A. Request
5) A. Unacknowledged connectionless service
6) C. Acknowledged connection oriented service
7) B. Acknowledged connectionless service
8) B. Indication
9) B. Indication
10) B. error detection
11) C. error correction
12) A. Forward error correction
13) D. Retransmission
14) A. Dataword
15) B. Framing
16) B. Fixed Size Framing
17) C. Variable Size Framing
18) D. All of the above
19) A. stop and wait protocol
20) C. sliding window protocol