

- 1) There are \_\_\_\_\_ Internet service providers.  
a) regional                      b) local                      c) national and international                      **d) all of the above**
- 2) \_\_\_\_\_ refers to the physical or logical arrangement of a network.  
**a) Topology**                      b) Mode of operation                      c) Data flow                      d) None of the above
- 3) A \_\_\_\_\_ is a data communication system spanning states, countries, or the whole world  
a) MAN                      **b) WAN**                      c) LAN                      d) none of the above
- 4) A \_\_\_\_\_ connection provides a dedicated link between two devices.  
a) primary                      b) multipoint                      **c) point-to-point**                      d) secondary
- 5) Which topology requires a multipoint connection?  
**a) Bus**                      b) Star                      c) Mesh                      d) Ring
- 6) A \_\_\_\_\_ is a set of rules that governs data communication.  
**a) protocol**                      b) forum                      c) standard                      d) none of the above
- 7) In a \_\_\_\_\_ connection, two and only two devices are connected by a dedicated link.  
a) multipoint                      **b) point-to-point**                      c) (a) and (b)                      d) none of the above
- 8) The information to be communicated in a data communications system is the \_\_\_\_\_.  
a) Medium                      b) Protocol                      **c) Message**                      d) Transmission
- 9) \_\_\_\_\_ defines how a particular pattern to be interpreted, and what action is to be taken based on that interpretation.  
a) Syntax                      **b) Semantics**                      c) Timing                      d) None of the above
- 10) Frequency of failure and network recovery time after a failure are measures of the \_\_\_\_\_ of a network.  
a) Performance                      b) Security                      **c) Reliability**                      d) Feasibility
- 11) A television broadcast is an example of \_\_\_\_\_ transmission.  
a) half-duplex                      **b) simplex**                      c) full-duplex                      d) automatic
- 12) Data flow between two devices can occur in a \_\_\_\_\_ way.  
a) simplex                      b) half-duplex                      c) full-duplex                      **d) all of the above**

- 13) \_\_\_\_\_ are special-interest groups that quickly test, evaluate, and standardize new technologies.
- a) Standards organizations                      b) Regulatory agencies  
**c) Forums**    d) All of the above
- 14) Which agency developed standards for physical connection interfaces and electronic signaling specifications?
- a) ISO                      b) ITU-T                      c) ANSI                      **d) EIA**
- 15) A \_\_\_\_\_ is a data communication system within a building, plant, or campus, or between nearby buildings.
- a) LAN**                      b) MAN                      c) WAN                      d) none of the above
- 16) \_\_\_\_\_ refers to two characteristics: when data should be sent and how fast it can be sent.
- a) Semantics                      **b) Timing**                      c) Syntax                      d) none of the above
- 17) This was the first network.
- a) CSNET                      b) NSFNET                      **c) ARPANET**                      d) ANSNET
- 18) Devices may be arranged in a \_\_\_\_\_ topology.
- a) mesh                      b) ring                      c) bus                      **d) all of the above**
- 19) \_\_\_\_\_ is the protocol suite for the current Internet.
- a) UNIX                      b) NCP                      **c) TCP/IP**                      d) ACM
- 20) \_\_\_\_\_ is a collection of many separate networks.
- a) A WAN                      **b) An internet**                      c) A LAN                      d) None of the above
- 21) In a \_\_\_\_\_ connection, three or more devices share a link.
- a) point-to-point                      **b) multipoint**                      c) (a) and (b)                      d) none of the above
- 22) Which organization has authority over interstate and international commerce in the communications field?
- a) FCC**                      b) IEEE                      c) ITU-T                      d) ISOC
- 23) In the original ARPANET, \_\_\_\_\_ were directly connected together.
- a) routers                      b) host computers                      c) networks                      **d) IMPs**

- 24) Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.  
a) **simplex**                      b) half-duplex                      c) full-duplex                      d) automatic
- 25) Which topology requires a central controller or hub?  
a) Mesh                      b) Bus                      **c) Star**                      d) Ring
- 26) The \_\_\_\_\_ is the physical path over which a message travels.  
a) Protocol                      b) Signal                      **c) Medium**                      d) All the above
- 27) In a \_\_\_\_\_ connection, more than two devices can share a single link.  
**a) multipoint**                      b) point-to-point                      c) primary                      d) secondary
- 28) \_\_\_\_\_ refers to the structure or format of the data, meaning the order in which they are presented.  
a) Semantics                      **b) Syntax**                      c) Timing                      d) All of the above
- 29) An unauthorized user is a network \_\_\_\_\_ issue.  
**a) Security**                      b) Reliability                      c) Performance                      d) All the above
- 30) \_\_\_\_\_ is an idea or concept that is a precursor to an Internet standard.  
a) RCF                      b) ID                      **c) RFC**                      d) none of the above
- 31) In \_\_\_\_\_ transmission, the channel capacity is shared by both communicating devices at all times.  
a) simplex                      b) half-duplex                      **c) full-duplex**                      d) half-simplex
- 32) This topology requires multipoint connection  
a) Star                      b) Mesh                      c) Ring                      **d) Bus**
- 33) Data communication system within a building or campus is  
**a) LAN**                      b) WAN                      c) MAN                      d) None of the mentioned
- 34) Expand WAN  
a) World area network                      **b) Wide area network**  
c) Web area network                      d) None of the mentioned
- 35) In TDM, slots are further divided into  
a) Seconds                      **b) Frames**                      c) Packets                      d) None of the mentioned

36) Multiplexing technique that shifts each signal to a different carrier frequency

- a) **FDM**                      b) TDM                      c) Either a or b                      d) Both a and b

Explanation: FDM stands for Frequency division multiplexing.

37) Types of software programs are

- a) Application programs                      b) Replicate programs  
c) Logical programs                      **d) both A and B**

38) Set of programs which consist of full set of documentations is termed as

- a) database packages      b) file packages      c) bus packages      **d) software packages**

39) Specialized program that allows user to utilize in specific application is classified as

- a) relative programs                      **b) application programs**  
c) relative programs                      d) replicate programs

40) Program which is used to control system performance is classified as

- a) experimental program                      **b) system program**  
c) specialized program                      d) organized program

41) Examples of system programs includes

- a) operating system of computer                      b) trace program  
c) compiler                      **b) all of above**

42) The Internet model consists of \_\_\_\_\_ layers.

- a) Three                      **b) Five**                      c) Seven                      d) Eight

43) The process-to-process delivery of the entire message is the responsibility of the \_\_\_\_\_ layer.

- a) Network                      **b) Transport**                      c) Application                      d) Physical

43) The \_\_\_\_\_ layer is the layer closest to the transmission medium.

- a) **Physical**                      b) Data link                      c) Network                      d) Transport

44) Mail services are available to network users through the \_\_\_\_\_ layer.

- a) Data link                      b) Physical                      c) Transport                      **d) Application**

45) As the data packet moves from the upper to the lower layers, headers are \_\_\_\_\_.

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

- 46) The \_\_\_\_\_ layer lies between the network layer and the application layer.  
a) Physical                      b) Data link                      c) **Transport**                      d) None of the above
- 47) Layer 2 lies between the physical layer and the \_\_\_\_\_ layer.  
a) **Network**                      b) Data link                      c) Transport                      d) None of the above
- 48) When data are transmitted from device A to device B, the header from A's layer 4 is read by B's \_\_\_\_\_ layer.  
a) Physical                      b) **Transport**                      c) Application                      d) None of the above
- 49) The \_\_\_\_\_ layer changes bits into electromagnetic signals.  
a) **Physical**                      b) Data link                      c) Transport                      d) None of the above
- 50) Which of the following is an application layer service?  
a) Remote log-in                      b) File transfer and access  
c) Mail service                      d) **All the above**
- 51) Why was the OSI model developed?  
a) Manufacturers disliked the TCP/IP protocol suite.  
b) The rate of data transfer was increasing exponentially  
c) **Standards were needed to allow any two systems to communicate**  
d) None of the above
- 52) The \_\_\_\_\_ model shows how the network functions of a computer ought to be organized.  
a) CCITT                      b) OSI                      c) ISO                      d) ANSI
- 53) The physical layer is concerned with the movement of \_\_\_\_\_ over the physical medium.  
a) programs                      b) dialogs                      c) protocols                      d) **bits**
- 54) The OSI model consists of \_\_\_\_\_ layers.  
a) three                      b) five                      c) **seven**                      d) eight
- 55) In the OSI model, as a data packet moves from the lower to the upper layers, headers are \_\_\_\_\_.  
a) added                      b) **removed**                      c) rearranged                      d) modified
- 56) In the OSI model, when data is transmitted from device A to device B, the header from A's layer 5 is read by B's \_\_\_\_\_ layer.  
a) Physical                      b) transport                      c) **session**                      d) presentation

- 57) In the OSI model, what is the main function of the transport layer?  
a) node-to-node delivery      b) **process-to-process message delivery**  
c) synchronization      d) updating and maintenance of routing tables
- 58) In the OSI model, encryption and decryption are functions of the \_\_\_\_\_ layer.  
a) Transport      b) **session**      c) presentation      d) application
- 59) When a host on network A sends a message to a host on network B, which address does the router look at?  
a) Port      b) **logical**      c) physical      d) none of the above
- 60) To deliver a message to the correct application program running on a host, the \_\_\_\_\_ address must be consulted.  
a) **Port**      b) IP      c) physical      d) none of the above
- 61) IPv6 has \_\_\_\_\_ -bit addresses.  
a) 32      b) 64      c) **128**      d) variable
- 62) ICMPv6 includes \_\_\_\_\_.  
a) IGMP      b) ARP      c) **RARP**      d) a and b
- 63) The \_\_\_\_\_ layer is responsible for moving frames from one hop (node) to the next.  
a) Physical      b) data link      c) transport      d) **none of the above**
- 64) The \_\_\_\_\_ layer adds a header to the packet coming from the upper layer that includes the logical addresses of the sender and receiver.  
a) physical      b) data link      c) **network**      d) none of the above
- 65) The \_\_\_\_\_ layer is responsible for the delivery of a message from one process to another.  
a) Physical      b) **transport**      c) network      d) None of the above
- 66) The Internetworking Protocol (IP) is a \_\_\_\_\_ protocol.  
a) reliable      b) connection-oriented      c) both a and b      d) **none of the above**
- 67) \_\_\_\_\_ 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) none of the above
- 68) \_\_\_\_\_ provides full transport layer services to applications.  
a) **TCP**      b) UDP      c) ARP      d) none of the above

- 69) The \_\_\_\_\_ address, also known as the link address, is the address of a node as defined by its LAN or WAN  
a) port                      b) **physical**                      c) logical                      d) none of the above
- 70) Ethernet uses a \_\_\_\_\_ physical address that is imprinted on the network interface card (NIC).  
a) 32- bit                      b) 64- bit                      c) **6- byte**                      d) none of the above
- 71) The \_\_\_\_\_ created a model called the Open Systems Interconnection, which allows diverse systems to communicate.  
a) OSI                      b) **ISO**                      c) IEEE                      d) none of the above
- 72) The seven-layer \_\_\_\_\_ model provides guidelines for the development of universally compatible networking protocols.  
a) **OSI**                      b) ISO                      c) IEEE                      d) none of the above
- 73) The physical, data link, and network layers are the \_\_\_\_\_ support layers.  
a) user                      b) **network**                      c) both (a) and (b)                      d) neither (a) nor (b)
- 74) The session, presentation, and application layers are the \_\_\_\_\_ support layers.  
a) **user**                      b) network                      c) both (a) and (b)                      d) neither (a) nor (b)
- 75) The \_\_\_\_\_ layer links the network support layers and the user support layers.  
a) **transport**                      b) network                      c) data link                      d) session
- 76) The \_\_\_\_\_ layer coordinates the functions required to transmit a bit stream over a physical medium.  
a) transport                      b) network                      c) data link                      d) **physical**
- 77) The \_\_\_\_\_ layer is responsible for delivering data units from one station to the next without errors.  
a) transport                      b) network                      c) **data link**                      d) physical
- 78) 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) physical
- 79) The \_\_\_\_\_ layer is responsible for the process-to-process delivery of the entire message.  
a) **transport**                      b) network                      c) data link                      d) physical



- 80) The \_\_\_\_\_ layer establishes, maintains, and synchronizes the interactions between communicating devices.  
a) transport      b) network      c) **session**      d) physical
- 81) The \_\_\_\_\_ layer ensures interoperability between communicating devices through transformation of data into a mutually agreed upon format  
a) transport      b) network      c) data link      d) **presentation**
- 82) The \_\_\_\_\_ layer enables the users to access the network.  
a) transport      b) application      c) data link      d) physical
- 83) TCP/IP is a \_\_\_\_\_ hierarchical protocol suite developed \_\_\_\_\_ the OSI model.  
a) **seven-layer; before**      b) five-layer; before  
c) six-layer; before      d) five-layer; after
- 84) The TCP/IP \_\_\_\_\_ layer is equivalent to the combined session, presentation, and application layers of the OSI model.  
a) application      b) **network**      c) data link      d) physical
- 85) The \_\_\_\_\_ address uniquely defines a host on the Internet.  
a) **physical**      b) IP      c) port      d) specific
- 86) The \_\_\_\_\_ address identifies a process on a host.  
a) physical      b) **IP**      c) port      d) specific
- 87) If the ACK value is 200, then what byte has been received successfully TCP/IP handshake?  
a) **199**      b) 200      c) 201      d) 202
- 88) In a network, after the load reaches the capacity, throughput \_\_\_\_\_  
a) Increases sharply      b) **Increases proportionally with the load**  
c) Declines sharply      d) Declines proportionally with the load
- 89) Which of the internetworking device takes data sent from one network device and forwards it to the destination node based on MAC address?  
a) **Switch**      b) Router      c) Hub      d) Bridge
- 90) Which of the following event is not possible in wireless LAN?  
a) **collision detection**      b) Acknowledgement of data frames  
c) multi-mode data transmission      d) Collision avoidance



91) The Routing Information protocol (RIP) is an intra-domain routing based on \_\_\_\_\_ routing algorithm.

- a) **Distance vector**      b) link state      c) path vector      d) OSPF

91) \_\_\_\_\_ is a subset of a network that includes all the routers but contains no loops.

- a) Spanning Tree      b) LEACH      c) Spider Structure      **d) Spider Tree**

93) Which pf the following primarily uses guided media?

- a) Radio broadcasting      b) Satellite communications  
**c) Local telephone system**      d) cellular telephone system

94) The \_\_\_\_\_ of errors is more difficult than the \_\_\_\_\_

- a) Detection; correction      **b) Correction; detection**  
c) Creation; correction;      d) Creation; detection

95) How the redundancy helps in detecting or correcting the errors.

- a) By sending the data twice**      b) using two different coding methods.  
c) By creating smaller block size      d) By sending extra bits with data.

96) The \_\_\_\_\_ sublayer is responsible for the operation of the CSMA/CD access method and framing.

- a) MAC      b) MII      **c) LLC**      d) Datalink

97) An organization is granted a block of classless addresses with the starting address 199.34.76.128/29. How many addresses are granted?

- a) 8**      b) 16      c) 32      d) 4

98) Which of the following application protocols generally does NOT use UDP as transport protocol

- a) Simple Mail Transfer protocol**      b) Real-time Transport protocol  
c) Simple Network Management protocol      d) Domain Name System(DNS)

99) Which all transport layer header flags are involved while establishing a connection?

- a) SYN and FIN      **b) SYN and ACK**      c) SYN, ACK and FIN      d) FIN and ACK

100) Identify the class of the following IP address : 4.5.6.7

- A. Class A**  
B. Class B

- C. Class C
- D. Class D

101) IEEE has defined the specifications for a wireless LAN, called \_\_\_\_\_, which covers the physical and data-link layers.

- A. IEEE 802.3
- B. IEEE 802.5
- C. IEEE 802.11**
- D. IEEE 802.2

102) Repeaters function in the \_\_\_\_\_ layer

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

103) An IPv4 address consists of \_\_\_\_\_ bits

- A. 16
- B. 32**
- C. 64
- D. 128

104) \_\_\_\_\_ may be defined as range of frequencies assigned to a channel

- A. Bandwidth**
- B. Channel Noise
- C. Bit Rate
- D. Channel latency

105) The port number used in HTTP is \_\_\_\_\_

- A. 20
- B. 21
- C. 80**
- D. 81

106) Identify the class of IP address 229.1.2.3

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

107) The file transfer protocol is built on \_\_\_\_\_

- A. Data Centric Architecture
- B. Service Oriented Architecture
- C. Client Server Architecture**
- D. Peer to peer Architecture

108) What does the server HTTP error code 404 mean?

- A. Unauthorised
- B. Not Found**
- C. Forbidden
- D. Request Timeout

109) Conversion of Domain Name to IP address is done by

- A. DHCP
- B. DNS**
- C. VPN
- D. Proxy Servers

110) The default port for SSH client connections is \_\_\_\_\_

- A. 20
- B. 21
- C. 22**
- D. 23

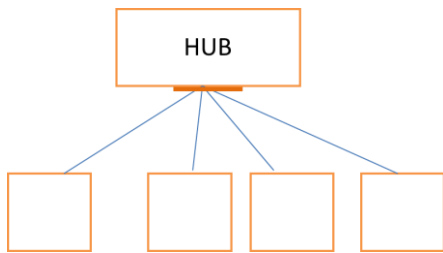
111) IPv6 address is a \_\_\_\_\_

- A. 16 bit address
- B. 32 bit address
- C. 64 bit address
- D. 128 bit address**

112) Which is a reserved IP address

- a) 172.12.0.0
- b) 152.12.0.0**
- c) 182.12.0.0
- d) 162.12.0.0

113) How many collisions and how many broadcast will happen



- a) Hub: 1 broadcast 4 collision
- b) Hub: 4 broadcast 4 collision
- c) Hub: 4 broadcast 1 collision
- d) Hub: 1 broadcast 1 collision**

114) Port 443 is reserved for which protocol

- a) CUPS
- b) HTTP
- c) HTTPS**
- d) TCP IP

115) In error correction, the receiver asks the sender to send the data again.

- A. forward
- B. backward
- C. retransmission**
- D. none of the above

116) Internet is a \_\_\_\_\_

- A: IP Switched Network**
- B: Data Switched Network
- C: Circuit Switched Network
- D: Packet Switched Network

117) Which of the following network topology is the most redundant in nature.

- A) bus
- B) Star
- C) Ring
- D) Mesh**

118) A \_\_\_\_\_ is a connecting device that operates in the physical and data link layers on the Internet model.

- A) router
- B) Repeater**
- C) Bridge
- D) Gateway

119) Identify the class of the following IPv4 address: 191.1.2.3.

- A) A
- B) B**
- C) c
- D) D

120) Circuit switching takes place at the layer.

- A) physical
- B) data line**
- C) network
- D) transport

121) HDLC is an acronym for

- A) Half—duplex digital link combination
- B) Host double-level circuit
- C) High-duplex line communication
- D) High-level data link control**

122) In Ethernet addressing, if all the bits are 1s, the address is\_\_\_\_\_.

- A) multicast
- B) Broadcast**
- C) Unicast
- D) anycast

123) What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/27?

- A) 12.2.2.0
- B) 12.22.32
- C) 12.22.64**
- D) 12.22.72

124) Which application layer protocol allows administrators to log into a server from remote locations and control a server as though logged in locally?

- A. DNS
- B. FTP
- C. SMTP
- D. Telnet**

125) What protocol is allowed a user to retrieve her/his mail from the mail server to her/his mail reader?

- A. POP3**
- B. FTP
- C. SMTP**
- D. SNMP

126) Which application layer protocol allows administrators to log into a server from remote locations and control a server as though logged in locally?

- A: DNS
- B: FTP
- C: SMTP
- D: Telnet**

127) Which of the following is uses IEEE 802.11 at the Data link layer

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

128) Which OSI layer corresponds to the TCP UDP layer?

- A: Network
- B: Session
- C: Transport**
- D: Data Link

129) Another term for CSMA/CD and the IEEE 802.3 is

- A: ethernet**
- B: token ring
- C: FDDI
- D: token bus

130) Which of the following protocol is used for sending or retrieving emails?

- A: SMTP
- B: POP3
- C: IMAP
- D: All of the above**

131) The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is known as

- A: retransmitting
- B: replaying
- C: piggybacking
- D: multicasting

132) Example of a device that uses duplex communication

A: radio

**B: telephone**

C: television

D: surveillance cameras

134) In CSMA/CD, CD stands for

A: contention detection

**B: collision detection**

C: carrier detection

D: congestion detection

135) Multiple ethernet segments can be connected by

A: port

B: bus

**C: repeater**

D: adapter

136) The \_\_\_\_\_ of errors is more difficult than the

A) Detection; correction

**B) Correction; detection**

C) Creation; correction

D) Creation; detection

1.7) What is the size of MAC(Ethernet) address?

A: 16 bits

B: 32 bits

**C: 48 bits**

D: 64 bits

138) The protocol does Three-Way Handshake for network communication is?

**A: TCP**

B: UDP

C: IP

D: Ethernet

139) The protocol is not part of Application Layer of OSI?

A: http

B: telnet

C: ftp

**D: icmp**

140) An IP-address with all host bits set to 1 is called?

A: Multicast

B: Class-less

C: Class-full

**D: Broadcast**

141) A port address in TCP/IP is \_\_\_\_\_ bits long.

a) 32

b) 48

**c) 16**

d) none of the above