Multiple Choice Questions & Answers

1. What type of network hardware is used for transmitting data over guided transmission media?
A) Router
B) Switch
C) Modem
D) Network Interface Card (NIC)
Answer: D) Network Interface Card (NIC)

2. Which of the following is a guided transmission medium?
A) Satellite
B) Wireless
C) Twisted pair
D) Microwave
Answer: C) Twisted pair

3. What is the purpose of the data link layer in the OSI model?
A) Transmits data over the physical layer
B) Provides error detection and correction
C) Establishes, maintains, and terminates connections
D) Routes data packets across the network
Answer: B) Provides error detection and correction

4. Which of the following is a design issue of the data link layer?
A) Routing
B) Framing
C) Error detection
D) Flow control
Answer: D) Flow control

5. What is the function of framing in the data link layer?
A) Routes data packets
B) Detects and corrects errors
C) Delimits data frames
D) Ensures secure transmission
Answer: C) Delimits data frames

6. Which transmission media is commonly used for wireless transmission?
A) Coaxial cable

B) Twisted pair
C) Fiber optics
D) Radio waves
Answer: D) Radio waves

7. Which layer of the OSI model is responsible for transmitting data over the physical layer?
A) Data link layer
B) Transport layer
C) Network layer
D) Application layer
Answer: A) Data link layer

8. Which reference model is commonly used for describing network protocols and systems?
A) TCP/IP model
B) OSI model
C) ARPANET model
D) Internet model
Answer: B) OSI model

9. ARPANET was an early example of which type of network?
A) Local Area Network (LAN)
B) Wide Area Network (WAN)
C) Metropolitan Area Network (MAN)
D) Personal Area Network (PAN)
Answer: B) Wide Area Network (WAN)

10. What type of cable is commonly used in twisted pair transmission media?
A) Optical fiber
B) Coaxial cable
C) Copper wire
D) Ethernet cable
Answer: C) Copper wire

11. Which layer of the OSI model is responsible for routing packets between different networks?
A) Physical layer
B) Data link layer

C) Network layer
D) Transport layer
Answer: C) Network layer

12. What is the primary function of the TCP/IP model?
A) To provide a framework for network hardware
B) To describe the behavior of network software
C) To define the physical characteristics of network cables
D) To standardize network protocols
Answer: B) To describe the behavior of network software

13. Which of the following is an example of a wireless transmission medium?
A) Coaxial cable
B) Optical fiber
C) Microwave
D) Twisted pair
Answer: C) Microwave

14. What is the primary purpose of error detection and correction in the data link layer?
A) To prevent unauthorized access to the network
B) To ensure data is transmitted securely
C) To detect and correct errors in transmitted data
D) To route data packets to their destination
Answer: C) To detect and correct errors in transmitted data

15. What type of network was ARPANET?
A) Local Area Network (LAN)
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C) Metropolitan Area Network (MAN)
D) Personal Area Network (PAN)
Answer: B) Wide Area Network (WAN)

16. Which of the following is an example of a guided transmission medium?
A) Radio waves
B) Fiber optics
C) Infrared
D) Microwave
Answer: B) Fiber optics

17. What is the purpose of the physical layer in the OSI model?
A) To route data packets
B) To provide error detection and correction
C) To transmit data over the network medium
D) To establish, maintain, and terminate connections
Answer: C) To transmit data over the network medium

18. Which layer of the OSI model is responsible for establishing, maintaining, and terminating connections?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: D) Transport layer

19. Which reference model was developed by the United States Department of Defense?
A) OSI model
B) TCP/IP model
C) ARPANET model
D) Internet model
Answer: B) TCP/IP model

20. What is the primary function of the network layer in the OSI model?
A) Error detection and correction
B) Framing
C) Routing
D) Flow control
Answer: C) Routing

21. Which of the following is an example of a wireless transmission medium?
A) Ethernet cable
B) Fiber optics
C) Satellite
D) Twisted pair
Answer: C) Satellite

22. Which layer of the OSI model is responsible for providing error detection and correction?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: B) Data link layer

23. What is the primary purpose of the TCP/IP model?
A) To describe the behavior of network hardware
B) To define the physical characteristics of network cables
C) To standardize network protocols
D) To provide a framework for network software
Answer: D) To provide a framework for network software

24. Which of the following is a guided transmission medium?
A) Radio waves
B) Fiber optics
C) Microwave
D) Infrared
Answer: B) Fiber optics

25. What is the primary function of the data link layer in the OSI model?
A) To route data packets
B) To provide error detection and correction
C) To transmit data over the physical layer
D) To establish, maintain, and terminate connections
Answer: C) To transmit data over the physical layer

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D) Internet model
Answer: B) OSI model

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D) Personal Area Network (PAN)
Answer: B) Wide Area Network (WAN)

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A) Optical fiber
B) Coaxial cable
C) Copper wire
D) Ethernet cable
Answer: C) Copper wire

29. Which layer of the OSI model is responsible for routing packets between different networks?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: C) Network layer

30. What is the primary function of the TCP/IP model?
A) To provide a framework for network hardware
B) To describe the behavior of network software
C) To define the physical characteristics of network cables
D) To standardize network protocols
Answer: B) To describe the behavior of network software

31. Which of the following is an example of a wireless transmission medium?
A) Coaxial cable
B) Optical fiber
C) Microwave
D) Twisted pair
Answer: C) Microwave

32. What is the primary purpose of error detection and correction in the data link layer?
A) To prevent unauthorized access to the network
B) To ensure data is transmitted securely
C) To detect and correct errors in transmitted data

D) To route data packets to their destination
Answer: C) To detect and correct errors in transmitted data

33. What type of network was ARPANET?
A) Local Area Network (LAN)
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D) Personal Area Network (PAN)
Answer: B) Wide Area Network (WAN)

34. Which of the following is an example of a guided transmission medium?
A) Radio waves
B) Fiber optics
C) Infrared
D) Microwave
Answer: B) Fiber optics

35. What is the purpose of the physical layer in the OSI model?
A) To route data packets
B) To provide error detection and correction
C) To transmit data over the network medium
D) To establish, maintain, and terminate connections
Answer: C) To transmit data over the network medium

36. Which layer of the OSI model is responsible for establishing, maintaining, and terminating connections?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: D) Transport layer

37. Which reference model was developed by the United States Department of Defense?
A) OSI model
B) TCP/IP model
C) ARPANET model
D) Internet model
Answer: B) TCP/IP model

38. What is the primary function of the network layer in the OSI model?
A) Error detection and correction
B) Framing
C) Routing
D) Flow control
Answer: C) Routing

39. Which of the following is an example of a wireless transmission medium?
A) Ethernet cable
B) Fiber optics
C) Satellite
D) Twisted pair
Answer: C) Satellite

40. Which layer of the OSI model is responsible for providing error detection and correction?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: B) Data link layer

41. What is the primary purpose of the TCP/IP model?
A) To describe the behavior of network hardware
B) To define the physical characteristics of network cables
C) To standardize network protocols
D) To provide a framework for network software
Answer: D) To provide a framework for network software

42. Which of the following is a guided transmission medium?
A) Radio waves
B) Fiber optics
C) Microwave
D) Infrared
Answer: B) Fiber optics

43. What is the primary function of the data link layer in the OSI model?
A) To route data packets
B) To provide error detection and correction

C) To transmit data over the physical layer
D) To establish, maintain, and terminate connections
Answer: C) To transmit data over the physical layer

44. Which reference model is commonly used for describing network protocols and systems?
A) TCP/IP model
B) OSI model
C) ARPANET model
D) Internet model
Answer: B) OSI model

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D) Personal Area Network (PAN)
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B) Coaxial cable
C) Copper wire
D) Ethernet cable
Answer: C) Copper wire

47. Which layer of the OSI model is responsible for routing packets between different networks?
A) Physical layer
B) Data link layer
C) Network layer
D) Transport layer
Answer: C) Network layer

48. What is the primary function of the TCP/IP model?
A) To provide a framework for network hardware
B) To describe the behavior of network software
C) To define the physical characteristics of network cables
D) To standardize network protocols

Answer: B) To describe the behavior of network software

49. Which of the following is an example of a wireless transmission medium?
A) Coaxial cable
B) Optical fiber
C) Microwave
D) Twisted pair
Answer: C) Microwave

50. What is the primary purpose of error detection and correction in the data link layer?
A) To prevent unauthorized access to the network
B) To ensure data is transmitted securely
C) To detect and correct errors in transmitted data
D) To route data packets to their destination
Answer: C) To detect and correct errors in transmitted data

51. What is the purpose of the simplex protocol in data link layer communication?
A) To allow bidirectional data transfer
B) To ensure error-free communication
C) To enable communication in one direction only
D) To handle collisions in the network
Answer: C) To enable communication in one direction only

52. In a simplex stop and wait protocol for an error-free channel, what happens after the sender sends a frame?
A) The sender waits for an acknowledgment
B) The sender sends the next frame immediately
C) The sender retransmits the frame
D) The sender terminates the connection
Answer: A) The sender waits for an acknowledgment

53. In a simplex stop and wait protocol for a noisy channel, what action is taken if the receiver detects an error in the received frame?
A) Receiver discards the frame and sends a negative acknowledgment (NAK)
B) Receiver discards the frame and sends an acknowledgment (ACK)
C) Receiver requests retransmission of the frame
D) Receiver terminates the connection

Answer: A) Receiver discards the frame and sends a negative acknowledgment (NAK)

54. What is the characteristic feature of a one-bit sliding window protocol?
A) It uses a single bit for acknowledgment
B) It slides the window by one frame at a time
C) It allows multiple frames to be transmitted before acknowledgment
D) It does not use acknowledgments
Answer: A) It uses a single bit for acknowledgment

55. What is the primary advantage of using Go-Back-N protocol over simplex stop and wait?
A) Reduced overhead
B) Faster data transmission
C) Greater reliability
D) Increased efficiency
Answer: D) Increased efficiency

56. In a protocol using Selective Repeat, what happens if a frame is received out of order?
A) Receiver discards the frame
B) Receiver buffers the frame until missing frames arrive
C) Receiver requests retransmission of the frame
D) Receiver sends an acknowledgment for the out-of-order frame
Answer: B) Receiver buffers the frame until missing frames arrive

57. Which of the following is an example of a collision-free multiple access protocol?
A) CSMA/CD
B) Token Passing
C) ALOHA
D) Slotted ALOHA
Answer: B) Token Passing

58. What is the primary purpose of the Medium Access Control (MAC) sublayer?
A) To detect and correct errors in transmitted data
B) To manage access to the physical medium
C) To encrypt data for secure transmission
D) To route data packets to their destinations

Answer: B) To manage access to the physical medium

59. Which multiple access protocol divides the available time into slots and allows nodes to transmit only in their respective slots?
A) ALOHA
B) Slotted ALOHA
C) CSMA/CD
D) Token Passing
Answer: B) Slotted ALOHA

60. In wireless LANs, what technique is commonly used to avoid interference between neighboring cells?
A) Frequency division multiplexing
B) Spread spectrum
C) Time division multiplexing
D) Polarization diversity
Answer: B) Spread spectrum

61. What is the primary drawback of the CSMA/CD protocol?
A) High collision rates
B) Low throughput
C) Inability to detect collisions
D) Limited scalability
Answer: A) High collision rates

62. Which of the following is NOT a characteristic of data link layer switching?
A) Forwarding packets based on MAC addresses
B) Operating at Layer 3 of the OSI model
C) Filtering and forwarding frames
D) Learning MAC addresses
Answer: B) Operating at Layer 3 of the OSI model

63. Which of the following is an advantage of carrier sense multiple access protocols?
A) They guarantee collision-free transmission
B) They reduce latency in data transmission
C) They eliminate the need for acknowledgments
D) They improve network security
Answer: B) They reduce latency in data transmission

64. What is the purpose of the sliding window technique in data link layer protocols?
A) To prevent data corruption during transmission
B) To ensure ordered delivery of frames
C) To regulate the flow of data between sender and receiver
D) To synchronize clocks between network devices
Answer: C) To regulate the flow of data between sender and receiver

65. In Go-Back-N protocol, what does the receiver do upon receiving a damaged frame?
A) Discards the frame
B) Sends a negative acknowledgment (NAK)
C) Requests retransmission of the damaged frame
D) Continues processing the received frames
Answer: B) Sends a negative acknowledgment (NAK)

66. Which of the following is true about collision-free protocols?
A) They ensure no collisions occur in the network
B) They are only applicable in wired networks
C) They rely on retransmissions to resolve collisions
D) They use time slots to avoid collisions
Answer: D) They use time slots to avoid collisions

67. What is the primary function of the Medium Access Control (MAC) sublayer?
A) To provide encryption for data transmission
B) To ensure error-free delivery of data
C) To manage access to the transmission medium
D) To establish connections between devices
Answer: C) To manage access to the transmission medium

68. Which protocol is used to avoid data packet collisions in Carrier Sense Multiple Access (CSMA)?
A) Token Passing
B) Collision Detection
C) Collision Avoidance
D) Slotted ALOHA
Answer: C) Collision Avoidance

69. What is the primary advantage of the Selective Repeat protocol over Go-Back-N?
A) Reduced overhead
B) Improved reliability
C) Higher throughput
D) Lower latency
Answer: B) Improved reliability

70. What is the primary disadvantage of using ALOHA multiple access protocol?
A) High probability of collisions
B) Low data throughput
C) Inability to handle noisy channels
D) Lack of scalability
Answer: A) High probability of collisions

71. Which of the following is an example of a simplex protocol?
A) CSMA/CD
B) Token Ring
C) One-bit sliding window protocol
D) Stop and Wait protocol
Answer: D) Stop and Wait protocol

72. In Go-Back-N protocol, what happens if the acknowledgment for a frame is lost?
A) Sender assumes the frame was received correctly
B) Sender waits indefinitely for acknowledgment
C) Sender retransmits all frames from the lost acknowledgment onward
D) Sender terminates the connection
Answer: C) Sender retransmits all frames from the lost acknowledgment onward

73. What is the primary function of the Medium Access Control (MAC) sublayer in the data link layer?
A) Error detection and correction
B) Logical addressing
C) Flow control
D) Media access control and addressing
Answer: D) Media access control and addressing

74. Which of the following is NOT a characteristic of Carrier Sense Multiple Access (CSMA)?
A) Nodes listen to the channel before transmitting
B) Nodes can transmit simultaneously
C) Collisions may occur
D) Nodes wait for a clear channel before transmitting
Answer: B) Nodes can transmit simultaneously

75. In Selective Repeat protocol, what does the receiver do upon receiving a frame with errors?
A) Requests retransmission of the entire window
B) Requests retransmission of the erroneous frame only
C) Discards the frame and continues receiving subsequent frames
D) Sends a negative acknowledgment (NAK) for the frame
Answer: D) Sends a negative acknowledgment (NAK) for the frame

76. What is the main purpose of using sliding window protocols in data link layer communication?
A) To prevent unauthorized access to the network
B) To regulate the flow of data between sender and receiver
C) To improve network security
D) To detect and correct errors in transmitted data
Answer: B) To regulate the flow of data between sender and receiver

77. Which of the following is a characteristic of Slotted ALOHA?
A) Nodes listen to the channel before transmitting
B) Time is divided into slots, and nodes transmit only at the beginning of a slot
C) Nodes use token passing for access control
D) Collisions are resolved using backoff algorithms
Answer: B) Time is divided into slots, and nodes transmit only at the beginning of a slot

78. Which protocol is known for its efficiency in handling burst errors?
A) Stop and Wait
B) Go-Back-N
C) Selective Repeat
D) ALOHA
Answer: C) Selective Repeat

79. What is the primary purpose of the Stop and Wait protocol in data link layer communication?
A) To regulate the flow of data between sender and receiver
B) To ensure ordered delivery of frames
C) To detect and correct errors in transmitted data
D) To synchronize clocks between network devices
Answer: A) To regulate the flow of data between sender and receiver

80. In a simplex stop and wait protocol for a noisy channel, what action is taken if the receiver detects an error in the received frame?
A) Receiver discards the frame and sends a negative acknowledgment (NAK)
B) Receiver discards the frame and sends an acknowledgment (ACK)
C) Receiver requests retransmission of the frame
D) Receiver terminates the connection
Answer: A) Receiver discards the frame and sends a negative acknowledgment (NAK)

81. Which of the following protocols uses a sliding window approach for reliable communication?
A) ALOHA
B) CSMA/CD
C) Stop and Wait
D) Selective Repeat
Answer: D) Selective Repeat

82. What is the primary advantage of using a sliding window protocol over a stop and wait protocol?
A) Higher throughput
B) Lower latency
C) Reduced overhead
D) Improved reliability
Answer: A) Higher throughput

83. Which of the following is an example of a collision-free multiple access protocol?
A) CSMA/CD
B) Token Ring
C) ALOHA
D) Slotted ALOHA
Answer: B) Token Ring

84. What is the primary purpose of the Medium Access Control (MAC) sublayer?
A) To provide encryption for data transmission
B) To ensure error-free delivery of data
C) To manage access to the transmission medium
D) To establish connections between devices
Answer: C) To manage access to the transmission medium

85. Which multiple access protocol divides the available time into slots and allows nodes to transmit only in their respective slots?
A) ALOHA
B) Slotted ALOHA
C) CSMA/CD
D) Token Passing
Answer: B) Slotted ALOHA

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A) Frequency division multiplexing
B) Spread spectrum
C) Time division multiplexing
D) Polarization diversity
Answer: B) Spread spectrum

87. What is the primary drawback of the CSMA/CD protocol?
A) High collision rates
B) Low throughput
C) Inability to detect collisions
D) Limited scalability
Answer: A) High collision rates

88. Which of the following is NOT a characteristic of data link layer switching?
A) Forwarding packets based on MAC addresses
B) Operating at Layer 3 of the OSI model
C) Filtering and forwarding frames
D) Learning MAC addresses
Answer: B) Operating at Layer 3 of the OSI model

89. Which of the following is an advantage of carrier sense multiple access protocols?
A) They guarantee collision-free transmission
B) They reduce latency in data transmission
C) They eliminate the need for acknowledgments
D) They improve network security
Answer: B) They reduce latency in data transmission

90. What is the purpose of the sliding window technique in data link layer protocols?
A) To prevent data corruption during transmission
B) To ensure ordered delivery of frames
C) To regulate the flow of data between sender and receiver
D) To synchronize clocks between network devices
Answer: C) To regulate the flow of data between sender and receiver

91. In Go-Back-N protocol, what does the receiver do upon receiving a damaged frame?
A) Discards the frame
B) Sends a negative acknowledgment (NAK)
C) Requests retransmission of the damaged frame
D) Continues processing the received frames
Answer: B) Sends a negative acknowledgment (NAK)

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B) They are only applicable in wired networks
C) They rely on retransmissions to resolve collisions
D) They use time slots to avoid collisions
Answer: D) They use time slots to avoid collisions

93. What is the primary function of the Medium Access Control (MAC) sublayer?
A) To provide encryption for data transmission
B) To ensure error-free delivery of data
C) To manage access to the transmission medium
D) To establish connections between devices
Answer: C) To manage access to the transmission medium

94. Which protocol is used to avoid data packet collisions in Carrier Sense Multiple Access (CSMA)?
A) Token Passing
B) Collision Detection
C) Collision Avoidance
D) Slotted ALOHA
Answer: C) Collision Avoidance

95. What is the primary advantage of the Selective Repeat protocol over Go-Back-N?
A) Reduced overhead
B) Improved reliability
C) Higher throughput
D) Lower latency
Answer: B) Improved reliability

96. What is the primary disadvantage of using ALOHA multiple access protocol?
A) High probability of collisions
B) Low data throughput
C) Inability to handle noisy channels
D) Lack of scalability
Answer: A) High probability of collisions

97. Which of the following is an example of a simplex protocol?
A) CSMA/CD
B) Token Ring
C) One-bit sliding window protocol
D) Stop and Wait protocol
Answer: D) Stop and Wait protocol

98. In Go-Back-N protocol, what happens if the acknowledgment for a frame is lost?
A) Sender assumes the frame was received correctly
B) Sender waits indefinitely for acknowledgment
C) Sender retransmits all frames from the lost acknowledgment onward
D) Sender terminates the connection
Answer: C) Sender retransmits all frames from the lost acknowledgment onward

99. What is the primary function of the Medium Access Control (MAC) sublayer in the data link layer?
A) Error detection and correction
B) Logical addressing
C) Flow control
D) Media access control and addressing
Answer: D) Media access control and addressing

100. Which of the following is NOT a characteristic of Carrier Sense Multiple Access (CSMA)?
A) Nodes listen to the channel before transmitting
B) Nodes can transmit simultaneously
C) Collisions may occur
D) Nodes wait for a clear channel before transmitting
Answer: B) Nodes can transmit simultaneously

101. What is one of the primary design issues in the network layer?
A) Data Link Layer protocols
B) Transport Layer protocols
C) Routing algorithms
D) Physical Layer protocols
Answer: C) Routing algorithms

102. Which routing algorithm finds the shortest path from a source to a destination?
A) Hierarchical routing
B) Flooding
C) Distance vector routing
D) Shortest path routing
Answer: D) Shortest path routing

103. What is the main drawback of flooding as a routing algorithm?
A) It is highly efficient
B) It consumes excessive bandwidth
C) It always finds the optimal path
D) It is suitable for large networks
Answer: B) It consumes excessive bandwidth

104. Which routing algorithm is based on dividing the network into levels of hierarchy?

A) Distance vector routing
B) Hierarchical routing
C) Multicast routing
D) Quality of Service routing
Answer: B) Hierarchical routing

105. In broadcast routing, a packet is sent to:
A) All nodes in the network
B) A specific node
C) Only neighboring nodes
D) Nodes with the shortest path
Answer: A) All nodes in the network

106. Which routing algorithm requires nodes to periodically exchange routing information with their neighbors?
A) Shortest path routing
B) Flooding
C) Distance vector routing
D) Hierarchical routing
Answer: C) Distance vector routing

107. What is a major challenge addressed by congestion control algorithms in the network layer?
A) Ensuring data confidentiality
B) Preventing unauthorized access
C) Managing network traffic
D) Establishing connections
Answer: C) Managing network traffic

108. Quality of Service (QoS) in the network layer refers to:
A) Ensuring data integrity
B) Prioritizing certain types of traffic
C) Securing network connections
D) Managing routing tables
Answer: B) Prioritizing certain types of traffic

109. Which term describes the process of connecting multiple networks to create a larger internetwork?
A) Flooding
B) Broadcasting

C) Internetworking
D) Multicasting
Answer: C) Internetworking

110. The Network layer in the internet is responsible for:
A) Determining the physical connection between nodes
B) Establishing end-to-end connections
C) Routing packets across multiple networks
D) Encoding and decoding data
Answer: C) Routing packets across multiple networks

111. Which of the following is NOT a characteristic of Hierarchical routing?
A) Dividing the network into levels of hierarchy
B) Reducing the size of routing tables
C) Providing direct links between all nodes
D) Improving scalability
Answer: C) Providing direct links between all nodes

112. In distance vector routing, each node maintains:
A) The shortest path to all destinations
B) A database of all network nodes
C) A routing table containing the next hop for each destination
D) The highest bandwidth link in the network
Answer: C) A routing table containing the next hop for each destination

113. Which of the following is a concern addressed by multicast routing?
A) Ensuring end-to-end connectivity
B) Broadcasting packets to all nodes
C) Delivering packets to multiple receivers efficiently
D) Routing packets along the shortest path
Answer: C) Delivering packets to multiple receivers efficiently

114. What is the primary advantage of shortest path routing?
A) Minimizing bandwidth usage
B) Maximizing network reliability
C) Reducing packet delay
D) Finding the most efficient route
Answer: C) Reducing packet delay

115. Which protocol does NOT fall under the Network layer?
A) IP (Internet Protocol)
B) ICMP (Internet Control Message Protocol)
C) TCP (Transmission Control Protocol)
D) OSPF (Open Shortest Path First)
Answer: C) TCP (Transmission Control Protocol)

116. What is a common method used in congestion control algorithms to alleviate network congestion?
A) Increasing the data transmission rate
B) Dropping packets randomly
C) Reducing the flow of data into the network
D) Ignoring network congestion
Answer: C) Reducing the flow of data into the network

117. Which of the following is a characteristic of distance vector routing?
A) Periodic exchange of routing tables
B) Minimal overhead
C) Suitable for large networks
D) Scalability
Answer: A) Periodic exchange of routing tables

118. What does CSMA stand for in networking?
A) Carrier Sense Multiple Access
B) Collision Sense Multiple Access
C) Collision Send Multiple Access
D) Carrier Signal Modulation Access
Answer: A) Carrier Sense Multiple Access

119. Which of the following routing algorithms is prone to the "count to infinity" problem?
A) Hierarchical routing
B) Shortest path routing
C) Flooding
D) Distance vector routing
Answer: D) Distance vector routing

120. What is a characteristic of multicast routing?
A) Sending packets to a specific group of recipients
B) Sending packets to all nodes in the network

C) Sending packets to a single destination
D) Sending packets to neighboring nodes
Answer: A) Sending packets to a specific group of recipients

121. Which of the following is a feature of Hierarchical routing?
A) High overhead
B) Centralized control
C) Reduced routing table size
D) Dynamic routing
Answer: C) Reduced routing table size

122. In which routing algorithm do nodes forward packets based on a pre-defined path?
A) Flooding
B) Shortest path routing
C) Distance vector routing
D) Hierarchical routing
Answer: D) Hierarchical routing

123. What is a primary concern in multicast routing?
A) Delivering packets to multiple receivers efficiently
B) Ensuring end-to-end connectivity
C) Broadcasting packets to all nodes
D) Finding the shortest path for each packet
Answer: A) Delivering packets to multiple receivers efficiently

124. Which protocol is commonly used for quality of service (QoS) management in IP networks?
A) ICMP
B) OSPF
C) RSVP
D) TCP
Answer: C) RSVP

125. What role does the network layer play in internetworking?
A) Managing physical connections between devices
B) Determining the structure of the network
C) Routing packets across multiple networks
D) Providing end-to-end encryption
Answer: C) Routing packets across multiple networks