

MCQs (Set-I)

- What is the main function of a network protocol?
 - To define the rules for transmitting data over a network
 - To provide a common language for communicating devices
 - To ensure the security of data transmission
 - Both a and b
- What is the OSI (Open Systems Interconnection) model used for?
 - To define the physical components of a network
 - To describe the process of transmitting data over a network
 - To provide a standardized framework for communication between devices in a network
 - To define the architecture of a computer
- What is the difference between a switch and a router?
 - Switches are used to connect multiple devices to a single network, while routers are used to connect multiple networks together
 - Routers are used to connect multiple devices to a single network, while switches are used to connect multiple networks together
 - Switches are used to control the flow of data, while routers are used to direct data to its destination
 - Routers are used to control the flow of data, while switches are used to direct data to its destination

- What is the main function of a hub in a network?
 - To control the flow of data
 - To direct data to its destination
 - To connect multiple devices to a single network
 - To provide network security
- What is the primary function of a bridge in a network?
 - To connect multiple networks together
 - To connect multiple devices to a single network
 - To control the flow of data between two or more networks
 - To provide network security
- What is the most common type of transmission media used in networking?
 - Twisted pair cable
 - Coaxial cable
 - Optical fiber
 - Wireless
- What is the OSI model used for?
 - To define the physical components of a network
 - To describe the process of transmitting data over a network
 - To provide a standardized framework for communication between devices in a network
 - To define the architecture of a computer

- How many layers does the OSI model have?
- A. 4 layers B. 5 layers
C. 7 layers D. 8 layers
- Which layer of the OSI model is responsible for reliable end-to-end data transmission?
- A. Physical layer B. Data Link layer
C. Network layer D. Transport layer
- Which layer of the OSI model is responsible for defining the electrical and physical specifications for transmitting data over a network?
- A. Physical layer B. Data Link layer
C. Network layer D. Transport layer
- Which layer of the OSI model is responsible for providing a standardized way of transmitting data between devices on a network?
- A. Physical layer B. Data Link layer
C. Network layer D. Session layer
- Which layer of the OSI model is responsible for managing the flow of data between applications on different devices?
- A. Physical layer
B. Data Link layer
C. Presentation layer
D. Application layer
- Which layer of the OSI model is responsible for breaking down data into smaller units for transmission over a network?
- A. Physical layer B. Data Link layer
C. Network layer D. Session layer
- Which layer of the OSI model is responsible for ensuring the integrity and accuracy of data transmission over a network?
- A. Physical layer B. Data Link layer
C. Network layer D. Transport layer

- Which layer of the OSI model is responsible for establishing, maintaining, and terminating connections between applications on different devices?
- A. Physical layer B. Data Link layer
C. Network layer D. Session layer
- Which layer of the OSI model is responsible for ensuring the secure and confidential transmission of data over a network?
- A. Physical layer B. Data Link layer
C. Network layer D. Security layer
- What is the main purpose of the TCP/IP model?
- A. To provide a standardized way of transmitting data between devices on a network
- B. To define the electrical and physical specifications for transmitting data over a network
- C. To ensure the reliability and accuracy of data transmission over a network
- D. To define the architecture of a computer
- How many layers does the TCP/IP model have?
- A. 4 layers B. 5 layers
C. 7 layers D. 2 layers
- Which layer of the TCP/IP model is responsible for establishing, maintaining, and terminating connections between applications on different devices?
- A. Network Access layer
B. Internet layer
C. Application layer
D. Transport layer

20. Which layer of the TCP/IP model is responsible for transmitting data over a network?
- Network Access layer
 - Internet layer
 - Application layer
 - Transport layer
21. Which layer of the TCP/IP model is responsible for ensuring the reliability and accuracy of data transmission over a network?
- Network Access layer
 - Internet layer
 - Application layer
 - Transport layer
22. What is the main function of the Internet layer in the TCP/IP model?
- To provide a standardized way of transmitting data between devices on a network
 - To control the flow of data between applications on different devices
 - To manage the routing of data between networks
 - To ensure the security of data transmission over a network
23. What is the main function of a hub in a network?
- To control the flow of data
 - To direct data to its destination
 - To connect multiple devices to a single network
 - To provide network security
24. What is the primary function of a bridge in a network?
- To connect multiple networks together
 - To connect multiple devices to a single network
 - To control the flow of data between two or more networks
 - To provide network security
25. What is the difference between a switch and a router?
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 - Routers are used to control the flow of data, while switches are used to direct data to its destination
26. What is the main function of a router in a network?
- To connect multiple devices to a single network
 - To control the flow of data between two or more networks
 - To direct data to its destination based on its IP address
 - To provide network security
27. What is the main difference between a hub and a switch?
- Hubs connect multiple devices to a single network, while switches connect multiple networks together
 - Switches connect multiple devices to a single network, while hubs connect multiple networks together
 - Hubs broadcast data to all connected devices, while switches only transmit data to the intended recipient
 - Switches broadcast data to all connected devices, while hubs only transmit data to the intended recipient
28. What is the main function of a hub in a network?
29. What is the main function of a switch in a network?
30. What is the main function of a hub in a network?
31. How does a hub handle data transmission in a network?
- It broadcasts data to all connected devices
 - It transmits data only to the intended recipient
 - It routes data to its destination based on its IP address
 - It provides network security
32. What type of topology does a hub use in a network?
- Star topology
 - Bus topology
 - Ring topology
 - Mesh topology
33. What is the main disadvantage of using a hub in a network?
- It provides network security
 - It is slow and less efficient compared to other networking devices
 - It is expensive
 - It is only suitable for small networks
34. How does a router handle data transmission in a network?
- It broadcasts data to all connected devices
 - It transmits data only to the intended recipient
 - It routes data to its destination based on its IP address
 - It provides network security
35. What type of topology does a router use in a network?
- Star topology
 - Bus topology
 - Ring topology
 - Mesh topology
36. What is the main advantage of using a router in a network?
- It provides network security
 - It is fast and efficient compared to other networking devices
 - It is expensive
 - It is only suitable for small networks
37. What type of devices can be connected to a router in a network?
- Computers, printers, and other network devices
 - Only computers
 - Only printers
 - Only hubs
38. What is the main function of a switch in a network?
- To control the flow of data
 - To direct data to its destination
 - To connect multiple devices to a single network
 - To provide network security
39. How does a switch handle data transmission in a network?
- It broadcasts data to all connected devices
 - It transmits data only to the intended recipient
 - It routes data to its destination based on its IP address
 - It provides network security

40. What type of topology does a switch use in a network?
 A. Star topology B. Bus topology
 C. Ring topology D. Mesh topology
41. What is the main advantage of using a switch in a network?
 A. It provides network security
 B. It is fast and efficient compared to other networking devices
 C. It is expensive
 D. It is only suitable for small networks
42. What type of devices can be connected to a switch in a network?
 A. Computers, printers, and other network devices
 B. Only computers
 C. Only printers
 D. Only routers
43. In which layer of the OSI model does a hub operate?
 A. Physical layer B. Data Link layer
 C. Network layer D. Transport layer
44. In which layer of the OSI model does a bridge operate?
 A. Physical layer B. Data Link layer
 C. Network layer D. Transport layer
45. In which layer of the OSI model does a switch operate?
 A. Physical layer B. Data Link layer
 C. Network layer D. Transport layer
46. In which layer of the OSI model does a router operate?
 A. Physical layer B. Data Link layer
 C. Network layer D. Transport layer
47. In which layer of the OSI model do transmission media (e.g. Ethernet cable, Wi-Fi, etc.) operate?
 A. Physical layer B. Data Link layer
 C. Network layer D. Transport layer
48. In which layer of the TCP/IP model does a hub operate?
 A. Network Access layer
 B. Internet layer
 C. Application layer
 D. Transport layer
49. In which layer of the TCP/IP model does a router operate?
 A. Network Access layer
 B. Internet layer
 C. Application layer
 D. Transport layer
50. In which layer of the TCP/IP model does a switch operate?
 A. Network Access layer
 B. Internet layer
 C. Application layer
 D. Transport layer
51. In which layer of the TCP/IP model do transmission media (e.g. Ethernet cable, Wi-Fi, etc.) operate?
 A. Network Access layer
 B. Internet layer
 C. Application layer
 D. Transport layer
52. In which layer of the TCP/IP model do protocols such as TCP, UDP, and IP operate?
 A. Network Access layer
 B. Internet layer
 C. Application layer
 D. Transport layer
53. What is the main type of transmission media used for twisted pair cables?
 A. Optical fiber
 B. Copper wire
 C. Wireless
 D. Coaxial cable
54. What is the main advantage of using twisted pair cables in a network?
 A. They are expensive
 B. They are less susceptible to interference compared to other types of transmission media
 C. They are not widely used
 D. They are not suitable for high-speed data transmission
55. What type of signals can be transmitted over twisted pair cables?
 A. Optical signals
 B. Electrical signals
 C. Wireless signals
 D. Radio signals
56. What is the maximum distance that data can be transmitted over twisted pair cables?
 A. 100 meters B. 500 meters
 C. 1000 meters D. 5000 meters
57. What is the main disadvantage of using twisted pair cables in a network?
 A. They are susceptible to interference
 B. They are expensive
 C. They are not widely used
 D. They are not suitable for high-speed data transmission
58. What is the main type of transmission media used for coaxial cables?
 A. Optical fiber B. Copper wire
 C. Wireless D. Coaxial cable
59. What is the main advantage of using coaxial cables in a network?
 A. They are highly resistant to interference compared to other types of transmission media
 B. They are expensive
 C. They are not widely used
 D. They are expensive
60. What type of signals can be transmitted over coaxial cables?
 A. Optical signals
 B. Electrical signals
 C. Wireless signals
 D. Radio signals
61. What is the maximum distance that data can be transmitted over coaxial cables?
 A. 100 meters B. 500 meters
 C. 1000 meters D. 5000 meters
62. What is the main disadvantage of using coaxial cables in a network?
 A. They are expensive
 B. They are not widely used
 C. They are difficult to install and terminate
 D. They are not suitable for high-speed data transmission
63. What is the main type of transmission media used for optical fibers?
 A. Optical fiber B. Copper wire
 C. Wireless D. Coaxial cable
64. What is the main advantage of using optical fibers in a network?
 A. They are highly resistant to interference compared to other types of transmission media
 B. They are fast and efficient for high-speed data transmission
 C. They are not widely used
 D. They are expensive
65. What type of signals can be transmitted over optical fibers?
 A. Optical signals
 B. Electrical signals
 C. Wireless signals
 D. Radio signals

66. What is the maximum distance that data can be transmitted over optical fibers?

- A. 100 meters
- B. 500 meters
- C. 1000 meters
- D. 5000 meters

67. What is the main disadvantage of using optical fibers in a network?

- A. They are expensive
- B. They are difficult to install and terminate
- C. They are not widely used
- D. They are susceptible to interference

68. Which type of transmission media uses physical cables to transmit signals?

- A. Guided media
- B. Unguided media
- C. Wireless media
- D. Both a and b

69. Which type of transmission media uses the air or a vacuum to transmit signals?

- A. Guided media
- B. Unguided media
- C. Wireless media
- D. Both a and b

70. What is the main type of transmission used for microwave communication?

- A. Radio waves
- B. Optical signals
- C. Infrared signals
- D. Ultraviolet signals

71. What is the main advantage of using microwave transmission in a network?

- A. It is highly resistant to interference compared to other types of transmission
- B. It is fast and efficient for high-speed data transmission
- C. It is not widely used
- D. It is expensive

72. What type of devices are used for microwave transmission in a network?

- A. Microwave towers
- B. Optical fiber devices
- C. Infrared devices
- D. Radio devices

73. What is the frequency range of microwave transmission in a network?

- A. 3 GHz to 30 GHz
- B. 30 MHz to 300 MHz
- C. 300 MHz to 3 GHz
- D. 3 GHz to 300 GHz

74. What is the main disadvantage of using microwave transmission in a network?

- A. It is susceptible to interference
- B. It is expensive
- C. It requires line-of-sight between the transmitting and receiving devices
- D. It is not widely used

75. What is the main type of transmission used for radio wave communication?

- A. Radio waves
- B. Optical signals
- C. Infrared signals
- D. Ultraviolet signals

76. What is the main advantage of using radio waves in a network?

- A. They are highly resistant to interference compared to other types of transmission
- B. They are fast and efficient for high-speed data transmission
- C. They are widely used
- D. They are inexpensive

77. What type of devices are used for radio wave transmission in a network?

- A. Radio towers
- B. Optical fiber devices
- C. Infrared devices
- D. Microwave devices

78. What is the frequency range of radio waves in a network?

- A. 3 GHz to 30 GHz
- B. 30 MHz to 300 MHz
- C. 300 MHz to 3 GHz
- D. 3 GHz to 300 GHz

79. What is the main disadvantage of using radio waves in a network?

- A. They are susceptible to interference
- B. They are expensive
- C. They require line-of-sight between the transmitting and receiving devices
- D. They are not suitable for high-speed data transmission

80. What is the main function of the Data Link layer?

- A. To provide reliable transmission of data over the physical layer
- B. To provide fast transmission of data over the physical layer
- C. To provide secure transmission of data over the physical layer
- D. To provide efficient transmission of data over the physical layer

81. What is the main purpose of error detection and correction in the Data Link layer?

- A. To detect and correct errors in the data transmission
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

82. What is the main function of flow control in the Data Link layer?

- A. To control the flow of data transmission to prevent overflow of the receiving device's buffer
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

83. What is an example of a Data Link layer protocol?

- A. TCP
- B. UDP
- C. IP
- D. HDLC

84. What is the main function of multiple access protocols in the Data Link layer?

- A. To regulate access to the shared transmission medium
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

85. What is the main function of LAN addressing in the Data Link layer?

- A. To provide unique addresses to devices on a local area network
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

86. What is the main function of ARP (Address Resolution Protocol) in the Data Link layer?

- A. To map IP addresses to physical addresses (MAC addresses)
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

87. What is Ethernet in the context of the Data Link layer?
- A type of multiple access protocol
 - A type of LAN addressing scheme
 - A type of error detection and correction scheme
 - A popular and widely used LAN technology
88. What is the IEEE 802.3 standard in the context of the Data Link layer?
- The standard for Ethernet
 - The standard for Token Bus
 - The standard for Token Ring
 - The standard for CSMA/CD
89. What is the IEEE 802.4 standard in the context of the Data Link layer?
- The standard for Ethernet
 - The standard for Token Bus
 - The standard for Token Ring
 - The standard for CSMA/CD
90. What is the IEEE 802.5 standard in the context of the Data Link layer?
- The standard for Ethernet
 - The standard for Token Bus
 - The standard for Token Ring
 - The standard for CSMA/CD
91. What is the main function of CSMA/CD in the Data Link layer?
- To regulate access to the shared transmission medium in Ethernet networks
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
92. What is the main function of wireless LANs in the Data Link layer?
- To provide wireless communication over a local area network
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
93. What is the main function of PPP (Point to Point Protocol) in the Data Link layer?
- To provide reliable transmission of data over a point-to-point connection
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
94. What is the main function of Wide area protocols in the Data Link layer?
- To provide reliable transmission of data over wide area networks
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
95. What is the main purpose of error detection in a network?
- To detect errors in the data transmission
 - To correct errors in the data transmission
 - Both a and b
 - Neither a nor b
96. What is the main purpose of error correction in a network?
- To detect errors in the data transmission
 - To correct errors in the data transmission
 - Both a and b
 - Neither a nor b
97. What is the most commonly used method for error detection in a network?
- Parity check
 - Checksum
 - Cyclic redundancy check (CRC)
 - All of the above
98. What is the most commonly used method for error correction in a network?
- Parity check
 - Checksum
 - Cyclic redundancy check (CRC)
 - Forward error correction (FEC)
99. How many bits are used for a parity check in a network?
- 1 bit
 - 2 bits
 - 3 bits
 - 4 bits
100. How many bits are used for a checksum in a network?
- 1 bit
 - 2 bits
 - Depends on the number of bits in the data being transmitted
 - 4 bits
101. How many bits are used for a cyclic redundancy check (CRC) in a network?
- 1 bit
 - 2 bits
 - Depends on the number of bits in the data being transmitted
 - 4 bits
102. How many bits are used for forward error correction (FEC) in a network?
- 1 bit
 - 2 bits
 - Depends on the number of bits in the data being transmitted
 - 4 bits
103. What is the main function of ARP in a network?
- To map IP addresses to physical addresses (MAC addresses)
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
104. What type of addresses does ARP resolve in a network?
- IP addresses
 - MAC addresses
 - Both IP and MAC addresses
 - None of these
105. What is the main use of ARP in a network?
- To allow communication between different devices on a network
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
106. How does ARP work in a network?
- By maintaining a cache (or table) of mappings between IP addresses and MAC addresses
 - By providing fast transmission of data
 - By providing secure transmission of data
 - By providing efficient transmission of data
107. What happens if the ARP cache does not have an entry for a particular IP address in a network?
- ARP sends a broadcast message to all devices on the network to resolve the mapping
 - ARP provides fast transmission of data
 - ARP provides secure transmission of data
 - ARP provides efficient transmission of data

108. How often does the ARP cache get updated in a network?

- A. Whenever a new mapping is added or an existing mapping is changed
- B. Every hour
- C. Every day
- D. Every week

109. What is the main function of the Network layer in a computer network?

- A. To provide addressing and routing of data between devices
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

110. What is an Internet address in the context of the Network layer?

- A. A unique identifier for a device on the Internet
- B. A fast transmission of data
- C. A secure transmission of data
- D. An efficient transmission of data

111. What is a classful address in the context of the Network layer?

- A. An addressing scheme where the address is divided into classes based on the size of the network
- B. A fast transmission of data
- C. A secure transmission of data
- D. An efficient transmission of data

112. What is the main function of subnetting in the Network layer?

- A. To divide a large network into smaller sub-networks
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

113. What is an example of a routing protocol in the Network layer?

- A. RIP
- B. OSPF
- C. BGP
- D. All of the above

114. What is the difference between unicast and multicast protocols in the Network layer?

- A. Unicast is used for one-to-one communication while multicast is used for one-to-many communication
- B. Unicast is used for fast transmission of data while multicast is used for secure transmission of data
- C. Unicast is used for efficient transmission of data while multicast is used for reliable transmission of data
- D. None of these

115. What is an example of a routing algorithm in the Network layer?

- A. Shortest path algorithm
- B. Flooding
- C. Distance vector routing
- D. All of the above

116. What is the main function of ARP in the Network layer?

- A. To map IP addresses to physical addresses (MAC addresses)
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

117. What is the main function of RARP in the Network layer?

- A. To map physical addresses (MAC addresses) to IP addresses
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

118. What is the main function of IP in the Network layer?

- A. To provide addressing and routing of data between devices
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

119. What is the main function of ICMP in the Network layer?

- A. To provide error reporting and control messages in IP networks
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

120. What is IPv6 in the context of the Network layer?

- A. The latest version of the Internet Protocol that replaces IPv4
- B. A fast transmission of data
- C. A secure transmission of data
- D. An efficient transmission of data

121. What is the main difference between the packet format in IPv4 and IPv6?

- A. IPv6 uses a larger packet size compared to IPv4
- B. IPv6 uses a smaller packet size compared to IPv4
- C. IPv6 uses the same packet size as IPv4
- D. None of these

122. What are extension headers in IPv6?

- A. Additional headers that can be used to carry optional information in IPv6 packets
- B. A fast transmission of data
- C. A secure transmission of data
- D. An efficient transmission of data

123. What is the main purpose of the transition from IPv4 to IPv6?

- A. To address the depletion of IPv4 addresses and provide more addresses for the growing Internet
- B. To provide fast transmission of data
- C. To provide secure transmission of data
- D. To provide efficient transmission of data

124. What is multicasting in the context of the Network layer?

- A. The delivery of a single message to multiple recipients simultaneously
- B. The delivery of multiple messages to a single recipient simultaneously
- C. The delivery of a single message to a single recipient simultaneously
- D. None of these

125. What is the main advantage of multicasting in the Network layer?

- A. It reduces the amount of network traffic and improves scalability
- B. It provides fast transmission of data
- C. It provides secure transmission of data
- D. It provides efficient transmission of data

126. How does multicasting in the Network layer work?

- A. By using a multicast address to identify the recipients of the message
- B. By using a broadcast address to identify the recipients of the message
- C. By using a unicast address to identify the recipients of the message
- D. None of these

- 127. What is the main difference between unicast and multicast in the Network layer?**
- Unicast is used for one-to-one communication while multicast is used for one-to-many communication
 - Unicast is used for fast transmission of data while multicast is used for secure transmission of data
 - Unicast is used for efficient transmission of data while multicast is used for reliable transmission of data
 - None of these
- 128. What is the main advantage of using multicast over unicast in the Network layer?**
- It reduces the amount of network traffic and improves scalability
 - It provides faster transmission of data compared to unicast
 - It provides more secure transmission of data compared to unicast
 - It provides more efficient transmission of data compared to unicast
- 129. What is an IP address in a computer network?**
- A unique identifier for a device on a network
 - A fast transmission of data
 - A secure transmission of data
 - An efficient transmission of data
- 130. What are the two main types of IP addresses?**
- IPv4 and IPv6
 - MAC and IP
 - Physical and logical
 - None of these
- 131. What is the main difference between IPv4 and IPv6 addresses?**
- IPv6 addresses are longer and provide more address space compared to IPv4 addresses
 - IPv4 addresses are faster compared to IPv6 addresses
 - IPv4 addresses are more secure compared to IPv6 addresses
 - IPv4 addresses are more efficient compared to IPv6 addresses
- 132. What is the maximum number of IP addresses that can be assigned using IPv4?**
- 4.3 billion
 - 4.3 million
 - 4.3 trillion
 - 4.3 quadrillion
- 133. What is the main purpose of subnetting in IP addressing?**
- To divide a large network into smaller sub-networks
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
- 134. What is a broadcast address in IP addressing?**
- An address used to send a message to all devices on a network
 - An address used for fast transmission of data
 - An address used for secure transmission of data
 - An address used for efficient transmission of data
- 135. What is a private IP address in IP addressing?**
- An IP address that can only be used within a private network and not on the Internet
 - An IP address that can be used on the Internet and private networks
 - An IP address used for fast transmission of data
 - An IP address used for secure transmission of data
- 136. What is a public IP address in IP addressing?**
- An IP address that can be used on the Internet and private networks
 - An IP address that can only be used within a private network and not on the Internet
 - An IP address used for fast transmission of data
 - An IP address used for secure transmission of data
- 141. What is a subnet mask in IPv4?**
- A 32-bit value used to define the portion of an IP address that represents the network address and the portion that represents the host address
 - A fast transmission of data
 - A secure transmission of data
 - An efficient transmission of data
- 142. What is the main purpose of subnetting in IPv4?**
- To divide a large network into smaller sub-networks
 - To provide fast transmission of data
 - To provide secure transmission of data
 - To provide efficient transmission of data
- 143. What is a broadcast address in IPv4?**
- The fourth version of the Internet Protocol that provides addressing and routing of data between devices
 - A fast transmission of data
 - A secure transmission of data
 - An efficient transmission of data
- 149. What is the maximum number of IP addresses that can be assigned using IPv4?**
- 4.3 billion
 - 4.3 million
 - 4.3 trillion
 - 4.3 quadrillion
- 140. What is the format of an IPv4 address?**
- A 32-bit address represented in dotted decimal notation
 - A 64-bit address represented in dotted decimal notation
 - A 128-bit address represented in dotted decimal notation
 - None of these
- 144. What is a private IP address in IPv4?**
- An IP address that can only be used within a private network and not on the Internet
 - An IP address that can be used on the Internet and private networks
 - An IP address used for fast transmission of data
 - An IP address used for secure transmission of data

- 145. What is a public IP address in IPv4?**
- An IP address that can be used on the Internet and private networks
 - An IP address that can only be used within a private network and not on the Internet
 - An IP address used for fast transmission of data
 - An IP address used for secure transmission of data
- 146. What is a Class A IPv4 address?**
- An IP address that has a large address space and is used for large networks
 - An IP address that has a small address space and is used for small networks
 - An IP address that provides fast transmission of data
 - An IP address that provides secure transmission of data
- 147. What is the format of a Class A IP address?**
- The first octet of the IP address is used to identify the network and the remaining three octets are used to identify the host
 - The first two octets of the IP address are used to identify the network and the remaining two octets are used to identify the host
 - The first three octets of the IP address are used to identify the network and the remaining octet is used to identify the host
 - None of these
- 148. What is the range of the first octet in a Class A IP address?**
- 0 to 127
 - 128 to 191
 - 192 to 223
 - 224 to 255
- 149. How many networks can be created using a Class A IP address?**
- 126
 - 16,384
 - 2,097,152
 - None of these
- 150. How many hosts can be assigned to a network using a Class A IP address?**
- 16,777,214
 - 65,534
 - 254
 - None of these
- 151. What is the subnet mask for a Class A IP address?**
- 255.0.0.0
 - 255.255.0.0
 - 255.255.255.0
 - None of these
- 152. What is the maximum number of subnets that can be created using a Class A IP address?**
- $2^7 = 128$
 - $2^{14} = 16,384$
 - $2^{21} = 2,097,152$
 - None of these
- 153. What is the maximum number of hosts that can be assigned to a subnet using a Class A IP address?**
- $2^{24} - 2 = 16,777,214$
 - $2^{16} - 2 = 65,534$
 - $2^8 - 2 = 254$
 - None of these
- 154. What is the first valid host address in a Class A IP address with the network address 10.0.0.0 and subnet mask 255.0.0.0?**
- 10.0.0.1
 - 10.0.0.0
 - 10.255.255.255
 - None of these
- 155. What is the last valid host address in a Class A IP address with the network address 10.0.0.0 and subnet mask 255.0.0.0?**
- 10.255.255.254
 - 10.0.0.0
 - 10.0.0.1
 - None of these
- 156. What is a Class B IP address?**
- An IP address that has a large address space and is used for large networks
 - An IP address that has a moderate address space and is used for medium-sized networks
 - An IP address that has a small address space and is used for small networks
 - None of these
- 157. What is the format of a Class B IP address?**
- The first octet of the IP address is used to identify the network and the remaining three octets are used to identify the host
 - The first two octets of the IP address are used to identify the network and the remaining two octets are used to identify the host
 - The first three octets of the IP address are used to identify the network and the remaining octet is used to identify the host
 - None of these
- 158. What is the range of the first octet in a Class C IP address?**
- 0 to 127
 - 128 to 191
 - 192 to 223
 - 224 to 255
- 159. How many networks can be created using a Class B IP address?**
- 126
 - 16,384
 - 2,097,152
 - None of these
- 160. How many hosts can be assigned to a network using a Class B IP address?**
- 16,777,214
 - 65,534
 - 254
 - None of these
- 161. What is the subnet mask for a Class B IP address?**
- 255.0.0.0
 - 255.255.0.0
 - 255.255.255.0
 - None of these
- 162. What is the maximum number of subnets that can be created using a Class B IP address?**
- $2^7 = 128$
 - $2^{14} = 16,384$
 - $2^{21} = 2,097,152$
 - None of these
- 163. What is the maximum number of hosts that can be assigned to a subnet using a Class B IP address?**
- $2^{24} - 2 = 16,777,214$
 - $2^{16} - 2 = 65,534$
 - $2^8 - 2 = 254$
 - None of these
- 164. What is a Class C IP address?**
- An IP address that has a large address space and is used for large networks
 - An IP address that has a moderate address space and is used for medium-sized networks
 - An IP address that has a small address space and is used for small networks
 - None of these
- 165. What is the format of a Class C IP address?**
- The first octet of the IP address is used to identify the network and the remaining three octets are used to identify the host
 - The first two octets of the IP address are used to identify the network and the remaining two octets are used to identify the host
 - The first three octets of the IP address are used to identify the network and the remaining octet is used to identify the host
 - None of these

166. What is the range of the first octet in a Class C IP address?

- A. 0 to 127
- B. 128 to 191
- C. 192 to 223
- D. 224 to 255

167. How many networks can be created using a Class C IP address?

- A. 126
- B. 16,384
- C. 2,097,152
- D. None of these

168. How many hosts can be assigned to a network using a Class C IP address?

- A. 16,777,214
- B. 65,534
- C. 254
- D. None of these

169. What is the subnet mask for a Class C IP address?

- A. 255.0.0.0
- B. 255.255.0.0
- C. 255.255.255.0
- D. None of these

170. What is the maximum number of subnets that can be created using a Class C IP address?

- A. $2^7 = 128$
- B. $2^{14} = 16,384$
- C. $2^{21} = 2,097,152$
- D. None of these

171. What is the maximum number of hosts that can be assigned to a subnet using a Class C IP address?

- A. $2^{24} - 2 = 16,777,214$
- B. $2^{16} - 2 = 65,534$
- C. $2^8 - 2 = 254$
- D. None of these

172. What is a Class D IP address?

- A. An IP address that is used for large networks
- B. An IP address that is used for medium-sized networks
- C. An IP address that is used for small networks
- D. An IP address that is reserved for multicast group addresses

173. What is the range of the first octet in a Class D IP address?

- A. 0 to 127
- B. 128 to 191
- C. 192 to 223
- D. 224 to 239

174. How many hosts can be assigned to a network using a Class D IP address?

- A. 16,777,214
- B. 65,534
- C. 254
- D. None of these

175. What is the subnet mask for a Class D IP address?

- A. 255.0.0.0
- B. 255.255.0.0
- C. 255.255.255.0
- D. None of these

176. What is the maximum number of subnets that can be created using a Class D IP address?

- A. $2^7 = 128$
- B. $2^{14} = 16,384$
- C. $2^{21} = 2,097,152$
- D. None of these

177. What is the maximum number of hosts that can be assigned to a subnet using a Class D IP address?

- A. $2^{24} - 2 = 16,777,214$
- B. $2^{16} - 2 = 65,534$
- C. $2^8 - 2 = 254$
- D. None of these

178. What is a Class E IP address?

- A. An IP address that is used for large networks
- B. An IP address that is used for medium-sized networks
- C. An IP address that is used for small networks
- D. An IP address that is reserved for experimental or future use

179. What is the range of the first octet in a Class E IP address?

- A. 0 to 127
- B. 128 to 191
- C. 192 to 223
- D. 240 to 255

180. How many hosts can be assigned to a network using a Class E IP address?

- A. 16,777,214
- B. 65,534
- C. 254
- D. None of these

181. What is the subnet mask for a Class E IP address?

- A. 255.0.0.0
- B. 255.255.0.0
- C. 255.255.255.0
- D. None of these

182. What is the maximum number of subnets that can be created using a Class E IP address?

- A. $2^7 = 128$
- B. $2^{14} = 16,384$
- C. $2^{21} = 2,097,152$
- D. None of these

183. What is the maximum number of hosts that can be assigned to a subnet using a Class E IP address?

- A. $2^{24} - 2 = 16,777,214$
- B. $2^{16} - 2 = 65,534$
- C. $2^8 - 2 = 254$
- D. None of these

184. What is the main difference between IPv4 and IPv6 in terms of address space?

- A. IPv4 has a larger address space than IPv6
- B. IPv6 has a larger address space than IPv4
- C. IPv4 and IPv6 have the same address space
- D. None of these

185. What is the length of an IPv4 address?

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

186. What is the length of an IPv6 address?

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

187. What is the main difference between IPv4 and IPv6 in terms of header format?

- A. IPv4 has a simpler header format than IPv6
- B. IPv6 has a simpler header format than IPv4
- C. IPv4 and IPv6 have the same header format
- D. None of these

188. What is the main difference between IPv4 and IPv6 in terms of address representation?

- A. IPv4 addresses are represented in binary form
- B. IPv6 addresses are represented in binary form
- C. IPv4 addresses are represented in hexadecimal form
- D. IPv6 addresses are represented in hexadecimal form

189. What is the main difference between IPv4 and IPv6 in terms of security?

- A. IPv4 is more secure than IPv6
- B. IPv6 is more secure than IPv4
- C. IPv4 and IPv6 have the same level of security
- D. None of these

190. What is the main difference between IPv4 and IPv6 in terms of support for multicast?

- A. IPv4 has better support for multicast than IPv6
- B. IPv6 has better support for multicast than IPv4
- C. IPv4 and IPv6 have the same level of support for multicast
- D. None of these

191. What is the main function of the Transport layer?

- A. To provide reliable data transmission between end systems
- B. To provide error-free data transmission between end systems
- C. To provide fast data transmission between end systems
- D. To provide secure data transmission between end systems

192. What are the two main Transport layer protocols?

- A. TCP and IP
- B. UDP and IP
- C. TCP and UDP
- D. IP and ICMP

193. What is a Port and Socket?

- A. A Port is a logical address used by the Transport layer to identify a specific process on a host, while a Socket is a combination of the IP address and Port number of a host
- B. A Port is a physical address used by the Network layer to identify a specific network device, while a Socket is a combination of the IP address and Port number of a host
- C. A Port is a logical address used by the Application layer to identify a specific process on a host, while a Socket is a combination of the IP address and Port number of a host
- D. A Port is a physical address used by the Transport layer to identify a specific network device, while a Socket is a combination of the IP address and Port number of a host

194. What is the main purpose of Connection establishment and Connection release in the Transport layer?

- A. To set up and tear down connections between end systems
- B. To provide reliable data transmission between end systems
- C. To provide fast data transmission between end systems
- D. To provide secure data transmission between end systems

195. What is the purpose of Flow control and buffering in the Transport layer?

- A. To ensure that data is transmitted accurately and in the correct order
- B. To prevent the receiver from being overwhelmed by data from the sender
- C. To ensure that data is transmitted as fast as possible
- D. To provide secure data transmission between end systems

196. What is the purpose of Multiplexing and de-multiplexing in the Transport layer?

- A. To allow multiple applications to share a single network connection
- B. To ensure that data is transmitted accurately and in the correct order
- C. To prevent the receiver from being overwhelmed by data from the sender
- D. To provide secure data transmission between end systems

197. What is the main function of a Congestion control algorithm in the Transport layer?

- A. To prevent data loss and ensure reliable data transmission
- B. To prevent network congestion and maintain efficient network performance
- C. To provide fast data transmission between end systems
- D. To provide secure data transmission between end systems

198. What is the main purpose of a Port in the Transport layer?

- A. To identify a specific process on a host
- B. To identify a specific network device
- C. To provide reliable data transmission between end systems
- D. To provide fast data transmission between end systems

199. What is a Socket in the Transport layer?

- A. A physical address used by the Network layer to identify a specific network device
- B. A logical address used by the Application layer to identify a specific process on a host
- C. A combination of the IP address and Port number of a host
- D. None of these

200. What is an example of a Port and Socket in the Transport layer?

- A. Port 80 and Socket 192.168.1.1:80
- B. Port 443 and Socket 192.168.1.1:443
- C. Port 25 and Socket 192.168.1.1:25
- D. Port 53 and Socket 192.168.1.1:53

201. What is the main difference between TCP and UDP in terms of reliability?

- A. TCP is more reliable than UDP
- B. UDP is more reliable than TCP
- C. TCP and UDP have the same level of reliability
- D. None of these

202. What is the main difference between TCP and UDP in terms of overhead?

- A. TCP has less overhead than UDP
- B. UDP has less overhead than TCP
- C. TCP and UDP have the same level of overhead
- D. None of these

203. What is the main difference between TCP and UDP in terms of error detection and correction?

- A. TCP provides error detection and correction, while UDP does not
- B. UDP provides error detection and correction, while TCP does not
- C. TCP and UDP provide the same level of error detection and correction
- D. None of these

204. What is the main purpose of HTTP in the Application layer?

- A. To provide secure data transmission between end systems
- B. To provide reliable data transmission between end systems
- C. To transmit data in a standardized format between clients and servers
- D. None of these

205. What is the main difference between HTTP and HTTPS?

- A. HTTPS is a more secure version of HTTP
- B. HTTP is a more secure version of HTTPS
- C. HTTPS and HTTP have the same level of security
- D. None of these

206. What is the main purpose of SSL (Secure Sockets Layer) in HTTPS?

- A. To provide encryption for data transmission
- B. To provide authentication for data transmission
- C. To provide both encryption and authentication for data transmission
- D. None of these

- 207. What is the main purpose of TLS (Transport Layer Security) in HTTPS?**
- To provide encryption for data transmission
 - To provide authentication for data transmission
 - To provide both encryption and authentication for data transmission
 - None of these
- 208. What is the main purpose of FTP (File Transfer Protocol)?**
- To transfer files between clients and servers over the internet
 - To transfer files between servers over the internet
 - To transfer files within a single server
 - None of these
- 209. What is PuTTY used for in file transfer?**
- A File Transfer client
 - A File Transfer server
 - An SSH (Secure Shell) client
 - None of these
- 210. What is WinSCP used for in file transfer?**
- A File Transfer client
 - A File Transfer server
 - An SCP (Secure Copy) client
 - None of these
- 211. What is the main difference between FTP and SFTP in terms of security?**
- FTP is more secure than SFTP
 - SFTP is more secure than FTP
 - FTP and SFTP have the same level of security
 - None of these
- 212. What is the main purpose of MRTG (Multi Router Traffic Grapher)?**
- To monitor network traffic and generate graphical representations of network usage
 - To monitor server performance and generate graphical representations of resource usage
 - To monitor website traffic and generate graphical representations of website usage
 - None of these
- 213. What is the main purpose of PRTG (Paessler Router Traffic Grapher)?**
- To monitor network traffic and generate graphical representations of network usage
 - To monitor server performance and generate graphical representations of resource usage
 - To monitor website traffic and generate graphical representations of website usage
 - None of these
- 214. What is the main purpose of SNMP (Simple Network Management Protocol)?**
- To monitor network traffic and generate graphical representations of network usage
 - To monitor server performance and generate graphical representations of resource usage
 - To monitor and manage network devices and generate alerts for network events
 - None of these
- 215. What is the main purpose of Packet Tracer?**
- To monitor network traffic and generate graphical representations of network usage
 - To monitor server performance and generate graphical representations of resource usage
 - To simulate and test network configurations and protocols
 - None of these
- 216. What is the main purpose of Wireshark?**
- To monitor network traffic and generate graphical representations of network usage
 - To monitor server performance and generate graphical representations of resource usage
 - To analyze and troubleshoot network traffic
 - None of these
- 217. What is the main purpose of socket programming?**
- Provide a standardized way for applications to communicate over a network
 - Provide a secure way for applications to communicate over a network
 - Provide a fast way for applications to communicate over a network
 - None of these
- 218. What is the main difference between a TCP (Transmission Control Protocol) socket and a UDP (User Datagram Protocol) socket?**
- TCP sockets provide reliable and ordered data transmission, while UDP sockets provide unreliable and unordered data transmission
 - UDP sockets provide reliable and ordered data transmission, while TCP sockets provide unreliable and unordered data transmission
 - TCP sockets provide encrypted data transmission, while UDP sockets provide unencrypted data transmission
 - None of these
- 219. What is the main purpose of the bind() function in socket programming?**
- To associate a socket with a specific network address
 - To associate a socket with a specific network port
 - To associate a socket with a specific network address and port
 - None of these
- 220. What is the main purpose of the listen() function in socket programming?**
- To allow a socket to receive incoming connections
 - To establish a connection with a remote socket
 - To send data to a remote socket
 - None of these
- 221. What is the main purpose of the accept() function in socket programming?**
- To allow a socket to receive incoming connections
 - To establish a connection with a remote socket
 - To accept an incoming connection from a remote socket
 - None of these
- 222. What is the main purpose of computer security?**
- To protect computer systems and networks from unauthorized access, use, disclosure, disruption, modification, or destruction
 - To enhance computer performance
 - To store data
 - None of these

223. What is the main type of security attack?

- A. Malware attack
- B. Man-in-the-middle attack
- C. Denial of Service attack
- D. All of the above

224. What is the main principle of cryptography?

- A. Confidentiality
- B. Integrity
- C. Availability
- D. All of the above

225. What is the main purpose of the RSA algorithm?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide digital signatures
- D. All of the above

226. What is the main purpose of digital signatures?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide authentication
- D. All of the above

227. What is the main purpose of securing e-mail (PGP)?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide authentication
- D. All of the above

228. What is a malware attack?

- A. An attack that involves the use of malicious software to compromise computer systems and networks
- B. An attack that involves intercepting communication between two systems to steal sensitive information or alter the communication
- C. An attack that involves overwhelming a computer system or network with traffic, making it unavailable to users
- D. None of these

229. What is a man-in-the-middle attack?

- A. An attack that involves the use of malicious software to compromise computer systems and networks
- B. An attack that involves intercepting communication between two systems to steal sensitive information or alter the communication
- C. An attack that involves overwhelming a computer system or network with traffic, making it unavailable to users
- D. None of these

230. What is a denial of service attack?

- A. An attack that involves the use of malicious software to compromise computer systems and networks
- B. An attack that involves intercepting communication between two systems to steal sensitive information or alter the communication
- C. An attack that involves overwhelming a computer system or network with traffic, making it unavailable to users
- D. None of these

231. What is a phishing attack?

- A. An attack that involves tricking a user into revealing sensitive information, such as login credentials or financial information
- B. An attack that involves the use of malicious software to compromise computer systems and networks
- C. An attack that involves intercepting communication between two systems to steal sensitive information or alter the communication
- D. An attack that involves overwhelming a computer system or network with traffic, making it unavailable to users

232. What is the main purpose of cryptography?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide availability
- D. All of the above

233. What is the main type of encryption used in cryptography?

- A. Symmetric encryption
- B. Asymmetric encryption
- C. Hash encryption
- D. All of the above

234. What is the main advantage of symmetric encryption over asymmetric encryption?

- A. Symmetric encryption is faster than asymmetric encryption
- B. Symmetric encryption is more secure than asymmetric encryption
- C. Asymmetric encryption is faster than symmetric encryption
- D. Asymmetric encryption is more secure than symmetric encryption

235. What is the main purpose of a hash function in cryptography?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide availability
- D. None of these

236. What is the main advantage of digital signatures over traditional signatures?

- A. Digital signatures are faster than traditional signatures
- B. Digital signatures are more secure than traditional signatures
- C. Traditional signatures are faster than digital signatures
- D. Traditional signatures are more secure than digital signatures

237. What is the RSA algorithm?

- A. A symmetric encryption algorithm
- B. An asymmetric encryption algorithm
- C. A hash encryption algorithm
- D. None of these

238. What is the main purpose of the RSA algorithm?

- A. To provide confidentiality
- B. To provide integrity
- C. To provide availability
- D. All of the above

239. What is the main advantage of the RSA algorithm over symmetric encryption algorithms?

- A. The RSA algorithm is faster than symmetric encryption algorithms
- B. The RSA algorithm is more secure than symmetric encryption algorithms
- C. Symmetric encryption algorithms are faster than the RSA algorithm
- D. Symmetric encryption algorithms are more secure than the RSA algorithm

240. What is the main disadvantage of the RSA algorithm?

- A. The RSA algorithm is slower than symmetric encryption algorithms
- B. The RSA algorithm is less secure than symmetric encryption algorithms
- C. Symmetric encryption algorithms are faster than the RSA algorithm
- D. Symmetric encryption algorithms are more secure than the RSA algorithm

241. What is the key length used in the RSA algorithm?

- A. 128-bit key length
- B. 256-bit key length
- C. 512-bit key length
- D. 1024-bit key length

- 242. What is a firewall?**
- A. A physical barrier that protects a network
 - B. A software application that protects a network
 - C. A hardware device that protects a network
 - D. All of the above
- 243. What is the main purpose of a firewall?**
- A. To provide confidentiality
 - B. To provide integrity
 - C. To provide availability
 - D. To provide security
- 244. What is the main type of firewall used in networks?**
- A. Packet filtering firewall
 - B. Circuit-level firewall
 - C. Application-level firewall
 - D. All of the above
- 245. What is the main advantage of a firewall over other security measures?**
- A. Firewalls are faster than other security measures
 - B. Firewalls are more secure than other security measures
 - C. Other security measures are faster than firewalls
 - D. Other security measures are more secure than firewalls
- 246. What is the main disadvantage of a firewall?**
- A. Firewalls are too slow to be effective
 - B. Firewalls are too complex to be used effectively
 - C. Firewalls can cause network performance issues
 - D. Firewalls can be bypassed by attackers
- 247. What is SSL?**
- A. A symmetric encryption algorithm
 - B. An asymmetric encryption algorithm
 - C. A secure communication protocol
 - D. None of these
- 248. What is the main purpose of SSL?**
- A. To provide confidentiality
 - B. To provide integrity
 - C. To provide availability
 - D. All of the above
- 249. What type of encryption does SSL use?**
- A. Symmetric encryption
 - B. Asymmetric encryption
 - C. Hash encryption
 - D. None of these
- 250. What is the main advantage of SSL over other secure communication protocols?**
- A. SSL is faster than other secure communication protocols
 - B. SSL is more secure than other secure communication protocols
 - C. Other secure communication protocols are faster than SSL
 - D. Other secure communication protocols are more secure than SSL
- 251. What is the main disadvantage of SSL?**
- A. SSL is too slow to be effective
 - B. SSL is too complex to be used effectively
 - C. SSL can cause network performance issues
 - D. SSL can be bypassed
- 252. What is ARP?**
- A. A routing protocol
 - B. A protocol used to map IP addresses to physical addresses
 - C. A protocol used to map physical addresses to IP addresses
 - D. None of these
- 253. What is RARP?**
- A. A protocol used to map IP addresses to physical addresses
 - B. A protocol used to map physical addresses to IP addresses
 - C. A routing protocol
 - D. None of these
- 254. What is IP?**
- A. A routing protocol
 - B. A protocol used to map IP addresses to physical addresses
 - C. A protocol used to map physical addresses to IP addresses
 - D. None of these
- 255. What is ICMP?**
- A. A routing protocol
 - B. A protocol used to map IP addresses to physical addresses
 - C. A protocol used to map physical addresses to IP addresses
 - D. A protocol used to manage network errors and status messages
- 256. What is the main advantage of ARP over other routing protocols?**
- A. ARP is faster than other routing protocols
 - B. ARP is more secure than other routing protocols
 - C. ARP is simpler to use than other routing protocols
 - D. Other routing protocols are faster than ARP
- 257. What is the port number for HTTP?**
- A. 21
 - B. 25
 - C. 80
 - D. 443
- 258. What is the port number for HTTPS?**
- A. 21
 - B. 25
 - C. 80
 - D. 443
- 259. What is the port number for FTP?**
- A. 21
 - B. 25
 - C. 80
 - D. 443
- 260. What is the port number for SMTP?**
- A. 21
 - B. 25
 - C. 80
 - D. 443
- 261. What is the port number for Telnet?**
- A. 21
 - B. 25
 - C. 80
 - D. 443
- 262. What is the subnet mask for the following IP address:**
192.168.100.25/20?
- A. 255.255.0.0
 - B. 255.255.240.0
 - C. 255.255.255.0
 - D. 255.255.255.240
- 263. What is the network address for the following IP address and subnet mask: 192.168.100.25/24?**
- A. 192.168.100.0
 - B. 192.168.100.1
 - C. 192.168.100.24
 - D. 192.168.100.25
- 264. What is the broadcast address for the following IP address and subnet mask: 192.168.100.25/22?**
- A. 192.168.100.0
 - B. 192.168.100.1
 - C. 192.168.100.22
 - D. 192.168.100.255
- 265. What does IPsec stand for?**
- A. Internet Protocol Security
 - B. Internet Protocol Secure
 - C. Internet Protocol Secured
 - D. Internet Protocol Securely
- 266. What is IPsec used for?**
- A. Encryption and authentication of IP packets
 - B. Encryption and authentication of TCP packets
 - C. Encryption and authentication of UDP packets
 - D. Encryption and authentication of all packets

267. What is a VPN used for?

- A. Virtual Private Networking
- B. Virtual Public Networking
- C. Virtual Protected Networking
- D. Virtual Private Network

268. What does VPN provide?

- A. Secure and private communication over a public network
- B. Secure and public communication over a private network
- C. Insecure and private communication over a public network
- D. Insecure and public communication over a private network

269. What does IEEE 802.3 stand for?

- A. Institute of Electrical and Electronics Engineers 802.3
- B. Institute of Electronics and Electrical Engineers 802.3
- C. Institute of Electrical Engineers 802.3
- D. Institute of Electronics Engineers 802.3

270. What is IEEE 802.3 known as?

- A. Ethernet
- B. Token Bus
- C. Token Ring
- D. CSMA/CD

271. What is the maximum data rate specified by the original IEEE 802.3 standard?

- A. 10 Mbps
- B. 100 Mbps
- C. 1000 Mbps
- D. 10 Gbps

272. What is the most common physical layer standard used by Ethernet networks?

- A. 10BaseT
- B. 100BaseT
- C. 1000BaseT
- D. 10000BaseT

273. What is a P2P network?

- A. A centralized network where a single server handles all data transfers
- B. A decentralized network where data transfers are handled by multiple nodes
- C. A hierarchical network where data transfers are handled by a single node
- D. A hybrid network where data transfers are handled by a combination of centralized and decentralized nodes

274. What are some examples of P2P applications?

- A. BitTorrent, Gnutella, eDonkey
- B. Skype, Google Drive, Dropbox
- C. Amazon Web Services, Microsoft Azure, Google Cloud
- D. HTTP, FTP, SMTP

275. What are the benefits of using P2P applications?

- A. Decentralized data transfers, reduced server load, lower costs
- B. Centralized data transfers, increased server load, higher costs
- C. Hierarchical data transfers, increased server load, lower costs
- D. Hybrid data transfers, balanced server load, moderate costs

276. What are the drawbacks of using P2P applications?

- A. Security concerns, copyright infringement, slow data transfers
- B. High data transfers, secure communication, no copyright infringement
- C. Fast data transfers, secure communication, no copyright infringement
- D. Secure data transfers, no copyright infringement, fast communication

283. What is the purpose of Multiplexing in computer networking?

- A. To reduce the number of communication channels required
- B. To increase the number of communication channels required
- C. To improve the quality of the communication channels
- D. To reduce the speed of the communication channels

284. What is the purpose of Demultiplexing in computer networking?

- A. To reduce the number of communication channels required
- B. To increase the number of communication channels required
- C. To improve the quality of the communication channels
- D. To reduce the speed of the communication channels

285. Which layer 2 device is capable of filtering traffic based on the MAC addresses of the devices connected to it?

- A. Hub
- B. Switch
- C. Router
- D. Gateway
- E. NIC

286. Which layer 3 device is capable of connecting two networks together and forwarding packets between them?

- A. Hub
- B. Switch
- C. Router
- D. Gateway
- E. NIC

287. Which of the following devices operates at the network layer of the OSI model and is capable of connecting two different types of networks together?

- A. Hub
- B. Switch
- C. Router
- D. Gateway
- E. Modem

288. Which layer of the OSI model is responsible for routing and switching packets between networks?
- Application layer
 - Transport layer
 - Network layer
 - Data link layer
 - Physical layer
289. Which layer of the OSI model is responsible for providing error-free transmission of data?
- Application layer
 - Transport layer
 - Network layer
 - Data link layer
 - Physical layer
290. In which network topology are all devices connected to a central hub or switch?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology
291. In which network topology are devices connected in a circular chain?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology
292. In which network topology are all devices connected to a single cable?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology
293. In which network topology are devices connected to each other in a redundant manner to provide multiple paths for data to travel?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology
294. In which network topology are devices connected to a central backbone cable?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology
295. Which of the following routing protocols is used in small to medium-sized networks and is based on the hop count metric?
- OSPF
 - BGP
 - EIGRP
 - RIP
296. Which of the following protocols is used to translate between IP addresses and MAC addresses in a network?
- ARP
 - DNS
 - ICMP
 - SNMP
297. Which of the following protocols is used to provide secure communication over a network, especially over the internet?
- SSL/TLS
 - IPSec
 - PPTP
 - L2TP
298. Which of the following network devices can inspect and filter traffic based on the content of the packets, and can be used to block malicious traffic?
- Router
 - Firewall
 - Switch
 - Load balancer
299. Which of the following protocols is used to manage network devices and monitor network performance?
- SNMP
 - SMTP
 - FTP
 - HTTP
300. Which of the following network topologies provides the highest level of fault tolerance and redundancy, with every device connected to every other device in the network?
- Mesh topology
 - Bus topology
 - Star topology
 - Ring topology
304. Which of the following network topologies is a combination of two or more different network topologies?
- Hybrid topology
 - Star topology
 - Mesh topology
 - Ring topology
305. Which of the following network topologies is considered the most reliable due to its redundancy and fault tolerance?
- Bus topology
 - Ring topology
 - Star topology
 - Mesh topology

ANSWER SHEET

1.D	2.C	3.A	4.C	5.C	6.A	7.C	8.C	9.D	10.A
11.C	12.D	13.B	14.B	15.D	16.D	17.A	18.A	19.C	20.A
21.D	22.C	23.C	24.C	25.A	26.C	27.C	28.C	29.A	30.A
31.B	32.A	33.C	34.C	35.D	36.B	37.A	38.C	39.B	40.A
41.B	42.A	43.A	44.B	45.B	46.C	47.A	48.A	49.B	50.A
51.A	52.B	53.B	54.B	55.B	56.A	57.A	58.D	59.A	60.B
61.C	62.C	63.A	64.B	65.A	66.D	67.A	68.A	69.B	70.A
71.B	72.A	73.C	74.C	75.A	76.C	77.A	78.B	79.D	80.A
81.A	82.A	83.D	84.A	85.A	86.A	87.D	88.A	89.B	90.C
91.A	92.A	93.A	94.A	95.A	96.B	97.C	98.D	99.A	100.C
101.C	102.C	103.A	104.A	105.A	106.A	107.A	108.A	109.A	110.A
111.A	112.A	113.D	114.A	115.D	116.A	117.A	118.A	119.A	120.A
121.A	122.A	123.A	124.A	125.A	126.A	127.A	128.A	129.A	130.A
131.A	132.A	133.A	134.A	135.A	136.A	137.A	138.A	139.A	140.A

141.A	142.A	143.A	144.A	145.A	146.A	147.A	148.A	149.A	150.A
151.A	152.B	153.A	154.A	155.A	156.B	157.B	158.B	159.B	160.B
161.B	162.C	163.B	164.C	165.C	166.C	167.C	168.C	169.C	170.A
171.C	172.D	173.D	174.D	175.D	176.D	177.D	178.D	179.D	180.D
181.D	182.D	183.D	184.B	185.C	186.A	187.B	188.D	189.B	190.B
191.A	192.C	193.A	194.A	195.B	196.	197.B	198.A	199.C	200.A
201.A	202.B	203.A	204.C	205.A	206.C	207.C	208.A	209.C	210.A
211.B	212.A	213.A	214.C	215.C	216.C	217.A	218.A	219.C	220.A
221.C	222.A	223.D	224.D	225.D	226.C	227.D	228.A	229.B	230.C
231.A	232.D	233.D	234.A	235.B	236.B	237.B	238.A	239.B	240.A
241.D	242.C	243.D	244.D	245.B	246.C	247.C	248.A	249.B	250.B
251.C	252.B	253.B	254.A	255.D	256.C	257.C	258.D	259.A	260.B
261.A	262.B	263.A	264.D	265.A	266.A	267.A	268.A	269.A	270.A
271.A	272.C	273.B	274.A	275.A	276.A	277.A	278.A	279.C	280.D
281.A	282.B	283.A	284.B	285.B	286.C	287.D	288.C	289.D	290.C
291.B	292.A	293.D	294.A	295.D	296.A	297.B	298.B	299.A	300.A
301.D	302.B	303.D	304.A	305.D					

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Online Resources:

- Coursera: Computer Networking Basics (<https://www.coursera.org/learn/computer-networking-basics>)
- Udemy: Computer Networking Fundamentals (<https://www.udemy.com/course/computer-networking-fundamentals/>)