1

Question: What is the primary function of the Network Layer in the TCP/IP model?

A) Establishing a synchronized session between sender and receiver

B) Providing a logical addressing scheme for data transmission

C) Handling error detection and correction during data transmission

D) Defining the electrical and mechanical specifications of the network

Correct Answer: B) Providing a logical addressing scheme for data transmission

2

Question: Which class of IPv4 addresses is reserved for multicasting?

A) Class A

B) Class B

C) Class C

D) Class D

Correct Answer: D) Class D

3

Question: What is the maximum number of hosts that can be accommodated in a Class C network using classful addressing?

A) 254

B) 65,534

C) 16,777,214

D) 4,294,967,294

Correct Answer: A) 254

4

Question: Which of the following is NOT a key difference between the OSI model and the TCP/IP model?

A) Number of layers

B) Use of encapsulation

C) Transport layer services

D) Addressing mechanisms

Correct Answer: B) Use of encapsulation

5

Question: What technique is used to divide a network into multiple smaller logical networks?

A) Supernetting

B) Subnetting

C) NAT

D) CIDR

Correct Answer: B) Subnetting

6

Question: Which field in the IPv4 header is used to prevent packets from endlessly circulating in a network?

A) Time to Live (TTL)

B) Header Length

C) Identification

D) Flags

Correct Answer: A) Time to Live (TTL)

7

Question: What is the purpose of the "Do Not Fragment" bit in the IPv4 header?

A) Prevents fragmentation at the sender, allowing only unfragmented packets to be sent.

B) Instructs routers not to fragment the packet, even if it exceeds the MTU of the next network.

C) Indicates that the packet has already been fragmented and should not be fragmented further.

D) Specifies the maximum size of fragments allowed for the packet.

Correct Answer: B) Instructs routers not to fragment the packet, even if it exceeds the MTU of the next network.

8

Question: Which multiple access method divides the available bandwidth into separate frequency bands for each station?

A) TDMA

B) FDMA

C) CSMA/CD

D) Aloha

Correct Answer: B) FDMA

9

Question: What is the purpose of Network Address Translation (NAT)?

A) To improve the security of a network by hiding internal IP addresses.

B) To translate private IP addresses to public IP addresses for internet communication.

C) To increase the number of available IP addresses by dynamically allocating them.

D) To optimize routing paths by translating IP addresses to network-specific identifiers.

Correct Answer: B) To translate private IP addresses to public IP addresses for internet communication.

10

Question: Which error detection method is commonly used at the data link layer?

A) Parity Checking

B) Checksum

C) Cyclic Redundancy Check (CRC)

D) Hamming Code

Correct Answer: C) Cyclic Redundancy Check (CRC)