

1. A packet has arrived with an MF(More fragments) bit value of 1. Is this the first fragment, the last fragment, or a middle fragment?

- A) First fragment B) Last fragment
- C) Middle fragment D) More information required

2. In an IPV4 packet, the value of the HLEN field is 1100 in binary. How many bytes of options field is being carried by this packet?

- A) 28 byte B) 20 byte C) 8 byte D) 40 byte

3. Internet Protocol (IPV4) uses the time-to-live (TTL) field in the IP datagram header. For which one of the following reasons uses TTL?

- A) Ensure packets reach the destination within that time.
- B) Discard packets that reach later than that time.
- C) Discard the packet, which is in an infinite loop.
- D) Limit the time for which a packet gets queued in intermediate routers.

4. What is the maximum payload size at the Network layer and the Data link layer on the TCP/IP protocol?

- A) Any size, 1480 bytes B) 65,495 bytes, 1500 bytes
- C) 65,535 bytes, 1500 bytes D) 65,515 bytes, 1500 bytes

5. Suppose an IP packet of length 1800 bytes with minimum header size entered into a local area network of MTU (Maximum transfer unit) is 510 bytes; then how many fragments will be generated from the packet, and what is the length of the last packet?

- A) 3, 300 B) 4, 336
- C) 5, 320 D) 4, 316

6. In TCP header SYN=0 and ACK =1 indicates [MSQ]

- A) Open connection packet B) Close connection packet
- C) Data packet D) Acknowledgement packet

7. What is the value of the acknowledgement field in a segment defined?

- A) The sequence number of the next byte to be received.
- B) The sequence number of the byte received previously.
- C) Total number of bytes to receive.
- D) The sequence of zeros and ones.

8. Which of the following statements is CORRECT? [MSQ]

- A) ICMP packet is not generated if an ICMP packet is discarded
- B) ICMP packets are always directed to the source IP address of the originating packet.
- C) In the case of multiple fragments, only one ICMP is sent back to the sender.
- D) Ping (Network utility) operates by sending ICMP echo request packets to the target host and waiting for an ICMP echo reply.

Question 9. Consider an IP link with a maximum transfer unit of 700 bytes, and each datagram size to send is 2400 bytes. Assume that the datagram recently sent has an identification number of 422. What is the total number of fragments that must be sent to transfer the full datagram, and what is the offset value of the 2nd fragment from all the fragmented datagrams? Note: Consider the minimum header size of the IPV4 datagram.

- A) 4, 85
- B) 5, 680
- C) 4, 1320
- D) 1, 0

10. The Internetworking Protocol (IP) is a _____ protocol.

- A) Reliable
- B) Connection-oriented
- C) Reliable and connection-oriented
- D) None of the choices are correct

11. A TCP message consisting of 2800 bytes is passed to IP for delivery across two networks. The first network can carry a maximum payload of 1500 bytes per frame, and the second network can carry a maximum payload of 500 bytes per frame, excluding network overhead. Assume that the IP overhead per packet is 20 bytes. What is the total IP overhead in the second network for this transmission?

- A) 140 bytes
- B) 80 bytes
- C) 120 bytes
- D) 160 bytes

12: If the value in the HLEN field of the IP header is 8, then what is the header's length?

- A) 8 bytes B) 16 bytes C) 32 bytes D) 40 bytes

13. Suppose a packet of 1800 bytes with minimum header size enters a local area network with an MTU (Maximum transfer unit) of 500 bytes. Then, how many fragments will be generated from the packet, and what is the payload size of the last packet?

- A) 3, 300 B) 4, 340
C) 5, 320 D) 3, 340

14. Which of the following assertions is/are TRUE about the Internet Protocol (IP) ? [MSQ]

- A) It is possible for a computer to have multiple IP addresses.
B) IP packets from the same source to the same destination can take different routes in the network.
C) IP ensures that a packet is discarded if it is unable to reach its destination within a given number of hops.
D) The packet source cannot set the route of an outgoing packets; the route is determined only by the routing tables in the routers on the way.

15. Which one of the following fields of an IP header is modified by a typical IP router? [MSQ]

- A) Checksum
B) Source address
C) Time to Live (TTL)
D) Length Length is length of packet