



Computer Network and Internet Protocol

(Jan 2024)

Assignment- Week 4

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following statement(s) is/are correct concerning to the TCP acknowledgement number?

- I. It is a 16-bit number.
 - II. It contains the sequence number of the previous bytes the receiver has received.
- a) Only I
 - b) Only II
 - c) Both I and II
 - d) None of them are correct

Correct Answer: (d)

Explanation: TCP acknowledgement number is 32-bit in length, and it contains the sequence number of the next byte the receiver expects to receive on a connection

QUESTION 2:

If maximum network layer payload size is 2KB, what is the maximum TCP payload size?

- a) 2048 bytes
- b) 2028 bytes
- c) 2008 bytes
- d) 1988 bytes

Correct Answer: (b)

Explanation: TCP header can range from 20 to 60 bytes. So, the maximum TCP payload would be (maximum network layer payload – minimum header size) i.e., $2048 - 20 = 2028$ bytes.

QUESTION 3:

Packets of the same session may be routed through different paths in

- a) Both TCP and UDP
- b) Neither TCP nor UDP
- c) TCP, but not UDP
- d) UDP, but not TCP

Correct Answer: (a)



Explanation: Packet is the network layer protocol data unit (PDU). TCP and UDP are transport layer protocols. Packets of the same session may be routed through different routes

QUESTION 4:

Which of the following system calls results in the sending of SYN packets?

- a) socket
- b) listen
- c) bind
- d) connect

Correct Answer: (d)

Explanation: In case of a TCP socket, connect system call causes an attempt to establish a new TCP connection. When connect() is called by a client, a three way handshake happens to establish the connection in TCP: (i) the client requests a connection by sending a SYN message to the server, (ii) the server acknowledges this request by sending SYN-ACK back to the client, and (iii) the client responds with an ACK and the connection is established.

QUESTION 5:

Which of the following statement(s) is/are true for the Transport Layer?

- I. Transport layer protocol should be stateful
 - II. Uses FTP protocols for ensuring flow control
- a) Only I.
 - b) Only II.
 - c) Both I and II.
 - d) None of them.

Correct Answer: (a)

Explanation: The transport layer needs to remember the state of the pipe, so that appropriate actions can be taken. We need a stateful protocol for the transport layer. Moreover, ARQ protocols are used for ensuring flow control.

QUESTION 6:

Which of the following is helpful to avoid TCP SYN flood attack? Use of cryptographic function to generate sequence numbers for TCP connection is helpful to avoid?

- a) Two-way handshaking
- b) Checksum
- c) Cryptographic functions
- d) None of these

Correct Answer: (c)



Explanation: Cryptographic function generates sequence numbers that help in avoiding the TCP SYN flood attack.

QUESTION 7:

What is/are the parameters responsible for restricting TCP segment size?

- a) IP address
- b) IP payload
- c) Maximum Transmission Unit (MTU) of the link
- d) Acknowledgement number field size

Correct Answer: (b) and (c)

Explanation: TCP segment size is restricted by two parameters namely IP payload (65515 bytes) and Maximum Transmission Unit (MTU) of the link

QUESTION 8:

“For effective congestion avoidance, the sending rate of the network should be the minimum of network rate and receiver rate”

The above statement is:

- a) true
- b) false

Correct Answer: (a)

Explanation: Sending rate should be based on the what the underlying network can support so should be kept minimum(network rate, receiver rate) for effective congestion avoidance

QUESTION 9:

TCP supports broadcasting

- a) The above statement is correct
- b) The above statement is wrong

Correct Answer: (a)

Explanation: TCP cannot broadcast, it supports point-to-point communication only

QUESTION 10:

Which is the default port number for establishing httpd (Apache HTTP server) connection?

- a) 43
- b) 44
- c) 443
- d) None of these

Correct Answer: (d)

Explanation: httpd is established through port 80