NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

Computer Network and Internet Protocol

(Jan 2024)

Assignment- Week 3

TYPE OF QUESTION: MCQ/MSQ

Number of questions: **10** **Total mark: 10 X 1 = 10**

QUESTION 1:

Consider that in the sliding window protocol, the packet sequence number is 4 bit long. What is the maximum window size?

a) 16
b) 15
c) 8
d) 32

Correct Answer: (b)
Explanation: Maximum window size is $2^n-1 = 2^4-1 = 16-1= 15$

QUESTION 2:

Flow control is primarily implemented in

a) Application layer
b) Session layer
c) Transport layer
d) Physical layer

Correct Answer: (c)
Explanation: Flow control is mainly a function of the transport layer

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QUESTION 3:

Consider the following statements and choose the correct option:

I. Self-clocking ensures that no two packets in the network have the same sequence number
II. TCP uses self-clocking

a) Only I is correct
b) Only II is correct
c) None of the statements are correct
d) Both the statements are correct

Correct Answer: (d)
Explanation: Self clocking is the mechanism to adjust inter-packet transmission duration based on the sequences acknowledged. It ensures that no two packets in the network have the same sequence number. This mechanism is used in TCP.

QUESTION 4:

Which statement (s) is/are true for Go Back N ARQ protocol?

a) All segments from 0 to N are retransmitted if segment N is lost
b) All segments from 1 to N are retransmitted if segment N is lost
c) All segments from 0 to (N-1) are retransmitted if segment N is lost
d) All segments from 1 to (N-1) are retransmitted if segment N is lost

Correct Answer: (a)

Explanation: In Go Back N ARQ, all segments from 0 to N are retransmitted if Segment N is lost.

QUESTION 5:

In sliding window protocol, if the sender window size is made 10. Then, how many frames would be in the window after transmitting 10 frames?

a) 0
b) 1
c) 10
d) Cannot be defined

Correct Answer: (a)

Explanation: If the sender window size is set to 10, then the sender can transmit up to 10 frames without receiving an acknowledgment. After transmitting 10 frames, the number of frames in the window would be 0.

QUESTION 6:

If an application requires reliable communication, which transport layer protocol would be used?

a) ARP
b) RARP
c) TCP
d) UDP

Correct Answer: (c)

Explanation: Applications that require the transport protocol to provide reliable data delivery use TCP because it verifies that data is delivered across the network accurately and in the proper sequence. TCP is a reliable, connection-oriented, byte-stream protocol.

QUESTION 7:

Statement: The delayed duplicate problem can be solved using TCP two-way handshaking method. The above statement is:

a) True
b) False

Correct Answer: (b)
Explanation: The two-way handshake presents potential problems when the ACK message from the server delays too much. A three-way handshake process solves the problem of delayed duplicate problem.

QUESTION 8:

What is the maximum size of the sender and receiver window in Stop and wait protocol?

a) 1
b) 2
c) 4
d) 8

Correct Answer: (a)
Explanation: Stop and wait protocol is also called as a one-bit sliding window protocol. The maximum size of the sender and receiver window is 1.

QUESTION 9:

Consider the following statements concerning to the selective repeat protocol and choose the correct option:

I. Only the lost or error frames are retransmitted
II. The retransmitted frames are always received in sequence

a) Only I is correct.
b) Only II is correct.
c) Both I and II are correct.
d) None of the statements are correct.

Correct Answer: (a)
Explanation: In Selective Repeat ARQ only the lost or error frames are retransmitted, whereas correct frames are received and buffered. The retransmitted frame is received out of sequence.

QUESTION 10:

In UNIX operating system, the transport layer protocols are implemented as a part of

a) hardware
b) firmware
c) kernel
d) none of these

Correct Answer: (c)
Explanation: The transport layer protocols are implemented as a part of kernel in UNIX operating systems

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