Branch : CSE & IT Batch : Hinglish

WEEKLY TEST – 07

Subject : Computer Networks

Topic : TCP & UDP

Maximum Marks 12

Q.1 to 4 Carry ONE Mark Each

[MCQ]

1. Silly window syndrome is related to_____.
(a) Error during transmission
(b) File transfer protocol
(c) Degrade in TCP performance
(d) Interface problem

[MCQ]

2. Which of the following is a transport layer protocol?
(a) Stream control transmission protocol
(b) Internet control message protocol
(c) Neighbor discovery protocol
(d) Dynamic host configuration protocol

[MCQ]

3. Nagle's algorithm can solve the silly window syndrome created by the_____.
(a) Sender
(b) Receiver
(c) Sender and Receiver
(d) None of the above

[MCQ]

4. Clark's solution can solve the silly window syndrome created by the_____.
(a) Sender
(b) Receiver
(c) Sender and Receiver
(d) None of the above.

Q.5 to 10 Carry TWO Mark Each

[NAT]

5. Suppose that the TCP congestion window is set to 18KB and a time out occurs. How big will the window (in MSS) be if the next four transmission burst are all successful? (Assume that MSS is 1KB).

[NAT]

6. Let the size of congestion window of a TCP connection be 16KB when a time out occurs. The round trip time of the connection is 200 msec. and the maximum segment size used is 2 KB. The time taken by the TCP connection (in msec.) to get back to 16 KB congestion window is_____.

[MSQ]

7. A UDP header is given as:
$(FFF0\ 0050\ FFFE\ FFFF)_{16}$
Consider the following option.
(a) The destination port value is 80.
(b) The source port value is 80.
(c) The source port value is 65520.
(d) The size of play load is 65528.

[MCQ]

8. Consider the slow start phase for a congestion control in a TCP connection initially, the window size is 4 MSS and the threshold is 36 MSS. After which transmission window size reached the threshold limit?
(a) 3 (b) 4
(c) 5 (d) 7

Answer Key

1. **(c)**
2. **(a)**
3. **(a)**
4. **(b)**
5. **(9 to 9)**
6. **(1200 to 1200)**
7. **(a,c,d)**
8. **(b)**

Hints and Solutions

1. (c)

Whenever the application is generating the data slowly and still uses TCP protocol than window size will be small and utilization will be less this problem is know as "Silly Window Syndrome".

2. (a)

Stream control transmission protocol (SCTP) in a transport layer protocol used in networking system where streams of data are to be continuously transmitted between to connected network nodes.

3. (a)

Nagle's algorithm suggested that send that first byte as it is and start buffering the remaining data.
Once the ACK segment reaches to the client compare the buffer size with the window size.
When the buffer size > window size.
Sender has to wait until buffer size = window size and start trammitting the data.

4. (b)

Clark's solution suggest that delay in ACK so that the next time window size will increase along will buffer size. Clark's solution can solve window syndrome created by receivers.

5. (9 to 9)

Time out occur when window size = 18KB

$$\text{Threshold} = \frac{18KB}{2} = 9KB$$

Slow start phare

1 MSS – 1st transmission
2 MSS – IInd transmission
4 MSS – IIrd transmission
8 MSS – IVth transmission
9 MSS – Vth transmission

After four successful transmission the window size will be = 9 MSS **or** 9 KB

6. (1200 to 1200)

Congestion window = 16 KB

$$\text{Threshold} = \frac{16KB}{2} = 8KB$$

2KB
4KB } Slow start phase
8KB

8KB
12KB
14KB } congestion avoidence
16KB

Time taken to reach 16KB = 6×200 = 1200 msec.

7. (a,c,d)

UDP header = 8 bytes
= 64 bits

Source port 16 bits	Destination port 16 bits
Total length 16 bits	Checksum 16 bits

Source port = $(FFF0)_{16}$
= $(1111\ 1111\ 1111\ 0000)_2$
= 65520

Destination port = $(0050)_{16}$
= $(0000\ 0000\ 0101\ 0000)_2$
= 80

Size of datagram = $(FFFE)_{16}$
= $(1111\ 1111\ 1111\ 1110)_2$
= 65534

Payload = Total length of datagram– UDP header
= 65534 – 8
Payload = 65528

8. (b)

4 MSS | 8 MSS | 16 MSS | 32 MSS | 36 MSS
I st transmission | II nd transmission | III rd transmission | IV th transmission