

**1. Consider the following statements regarding the slow start phase of the TCP congestion control algorithm. Note that cwnd stands for the TCP congestion window, and MSS denotes the Maximum Segment Size. Which one of the following is False?[MSQ]**

- A) The cwnd increases by 2 MSS on every successful acknowledgement.
- B) The cwnd approximately doubles on every successful acknowledgement.
- C) The cwnd increases by 1 MSS every round trip time.
- D) The cwnd approximately doubles every round trip time.

**2. Let the congestion window size of the TCP connection be 16 KB when a timeout occurs. The round trip time of a connection is 100 ms, and the maximum segment size is 2 KB. What is the time taken by the TCP connection to get back to the 16 KB congestion window?**

- A) 700 ms      B) 600 ms      C) 1000 ms      D) 800 ms

**3. In the slow start phase of the TCP congestion control algorithm, the size of the congestion window**

- A) Does not increase      B) Increases linearly
- C) Increases quadratically      D) Increases exponentially

**4. Consider an instance of TCP's additive increase multiplicative decrease(AIMD) algorithm where the window size at the start of the slow start phase is 1 MSS and the threshold at the start of the first transmission is 16 MSS. Assume that a timeout occurs during the seventh transmission. Find the congestion window size at the end of the 12th transmission.**

- A) 11 MSS      B) 7 MSS      C) 9 MSS      D) 13 MSS

**5. On a TCP connection, the current congestion window size is Congestion Window = 5 KB. The window size advertised by the receiver is Advertise Window = 7 KB. The last byte sent by the sender is LastByteSent = 10240, and the last byte acknowledged by the receiver is LastByteAcked = 9192. The current window size at the sender is**

- A) 2048 bytes                      B) 4096 bytes  
C) 5120 bytes                      D) 8192 bytes

**6. Which one of the following statements is TRUE?[MSQ]**

- A) TCP guarantees a minimum communication rate.  
B) TCP ensures in-order delivery.  
C) TCP reacts to congestion by reducing the sender window size.  
D) TCP employs retransmission to compensate for packet loss

**7. Consider the following statements regarding TCP's congestion control phases. Which of these statements is/are true?**

- I. The size of the congestion window increases exponentially until it reaches a threshold (in the slow start algorithm).  
II. In multiplicative decrease procedure, the threshold gets decreased to one-half of the previous window size.

- A) Only I                      B) Only II  
C) Both I & II                      D) None of these

**8. If the receiver capacity is 16 mss. If the slow start phase starts with 1 mss and no congestion is detected until maximum receiver capacity is reached. After how many RTTs have reached maximum receiver capacity?**

- A) 8                      B) 9                      C) 10                      D) 11

**9. Suppose the window size at the start of the slow start phase is 2 MSS and the threshold at the start of the first transmission is 16 MSS. Assume time out occurs during the sixth transmission. Suppose the Receiver window size is 22 MSS. Find the congestion window size at the end of the ninth transmission.**

- A) 11 MSS                      B) 2 MSS
- C) 8 MSS                      D) 22 MSS

**10. In the TCP header, SYN=0 and ACK = 1 indicates? [MSQ]**

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

**11. Suppose the initial sequence number is 100, and it increases the counter by 4,64,000 for every 4 sec; how long does it take for the counter to wrap around?**

- A) 37,025 seconds                      B) 47,445 seconds
- C) 37,142 seconds                      D) 57,025 seconds