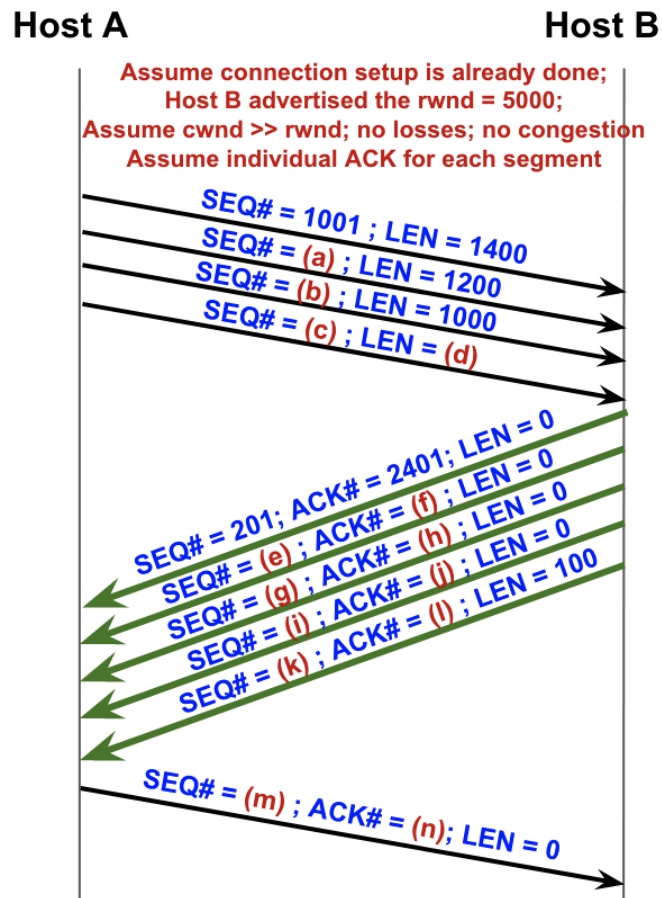


Quiz 2
CSE232 Computer Networks
Duration-30min, Full marks-13

November 14, 2022

Q.1. The figure shows TCP communication between Host A and Host B. Assume connection setup is done and the receiver advertised its window; **RWND=5000**. Also, the current congestion window value (CWND) is much larger than RWND. There are no packet losses and no timeouts (congestion). Given these assumptions, fill in the blanks from 'a' to 'n' with appropriate values for sequence numbers (SEQ#), acknowledgment numbers (ACK#), and data length (LEN). **Consider the maximum possible value while answering the question (d).** [7]



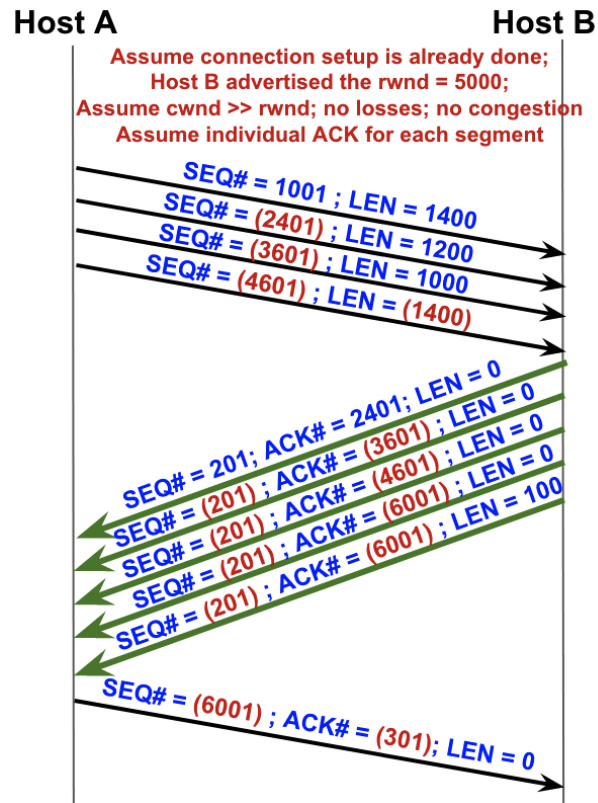
Ans

(a) 2401 (b) 3601 (c) 4601 (d) 1400

(e) 201 (f) 3601 (g) 201 (h) 4601 (i) 201 (j) 6001 (k) 201 (l) 6001

(m) 6001 (n) 301

Solution:



Q.2. Consider the following diagram of the congestion window with RTT. [2+2]

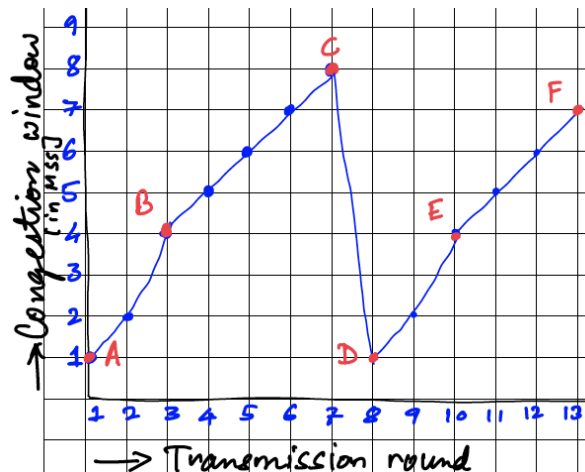
Ans:

Identify the phase of the congestion for each region

(a) A-B: **slow start** (b) B-C **congestion avoidance** (c) D-E **slow start** (d) E-F **congestion avoidance**

Now tell the value of ssthresh for each region starting

(a) A-B: **4** (b) B-C **4** (c) D-E **4** (d) E-F **4**



Roll. No.: _____ Name: _____ Section: _____

Q.3. Mark the one(s) that is(are) TRUE. [1]

- (a) The TCP timeout value is always set to the estimated RTT value.
- (b) TCP Reno treats the events: timeout and 3 DUP ACKs differently.
- (c) The TCP sender's window size is always set to the congestion window (cwnd) value.
- (d) If TCP observes a network problem (congestion or packet loss), the slow start threshold (sssthresh) value is always set to half of the current congestion window (cwnd).

Ans: (b) and (d)

Q4. Mark the one(s) that is (are) TRUE [1]

- (a) Fast retransmission is done when a sender receives 3 acknowledgments with the same acknowledgment number.
- (b) Once TCP establishes a connection, the sender can never time-out.
- (c) In the case of spurious retransmissions, the application throughput/goodput decreases.
- (d) In a client-server communication, a client can not receive any more data after it has sent the FIN packet to the server.

Ans: (c)