National University of Computer and Emerging Sciences,
Lahore Campus

	Course Name:	Computer Networks	Course Code:	CS 3001
	Program:	BS (Computer Science)	Semester:	Fall 2025
	Duration:	15 minutes	Total Marks:	15
	Paper Date:	07-October-2025	Section	5A , 5C
	Exam Type:	Quiz 3 - Chapter 3	Page(s):	2

Student Name **Roll No.** **Section:**

Q1. <u>Encircle the correct option:</u> **[5 marks] [CLO 3]**

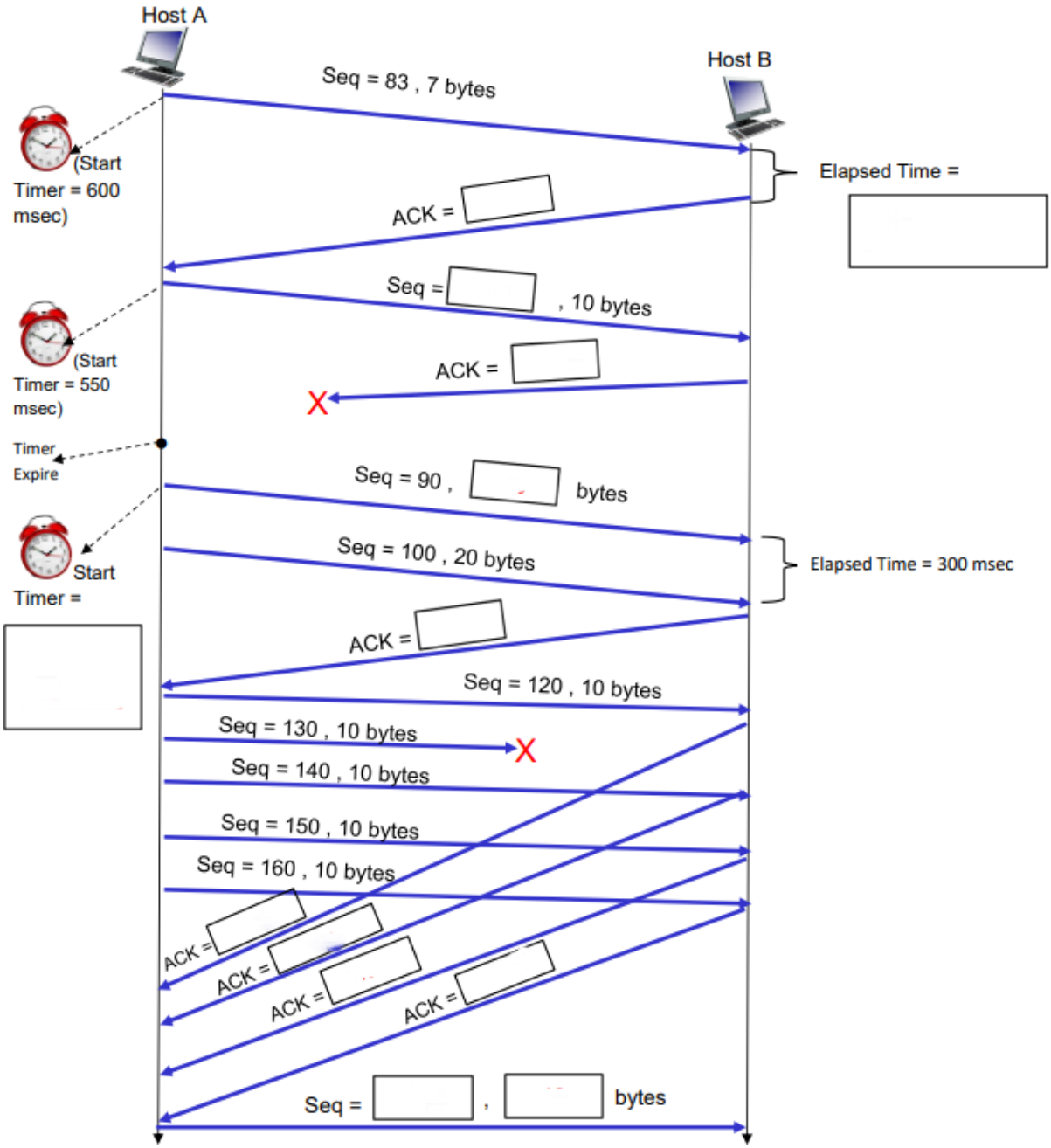
1. Which of the following is false with respect to TCP?
   a) Connection Oriented
   b) Process to Process
   c) Transport Layer Protocol
   d) Unreliable
2. What is the header size of a UDP packet?
   a) 8 Bytes
   b) 8 Bits
   c) 16 Bytes
   d) 20 Bytes
3. Which TCP mechanism is responsible for preventing a fast sender from overwhelming a slow receiver?
   a) Congestion Control
   b) Slow Start
   c) Congestion Avoidance
   d) Flow Control

True/False:

1. Selective Repeat makes better use of Bandwidth then Go-Back-N. [T / F]
2. Selective Repeat uses cumulative ACK's. [T / F]

Q2: **[10 Marks] [CLO 3]**

Refer to the TCP segments exchange between Host A to Host B. Fill in the missing values in the space provided in boxes:



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Q1. Encircle the correct option: **[5 marks] [CLO 3]**

1. The _____field is used to detect errors over the entire UDP packet.

   a) Header

   b) Checksum

   c) Source Port

   d) Destination Port

2. The mechanism in TCP with which the receiver of the data controls the amount of data that is to be sent by the sender is referred to as _____.

   a) Flow Control

   b) Error Control

   c) Congestion Control

   d) Error Detection

3. What is the primary difference between Go-Back-N and Selective Repeat protocols?

   a) Go-Back-N uses cumulative acknowledgments, while Selective Repeat uses individual acknowledgments.

   b) Go-Back-N has a larger window size compared to Selective Repeat.

   c) Selective Repeat has a higher probability of packet loss than Go-Back-N.

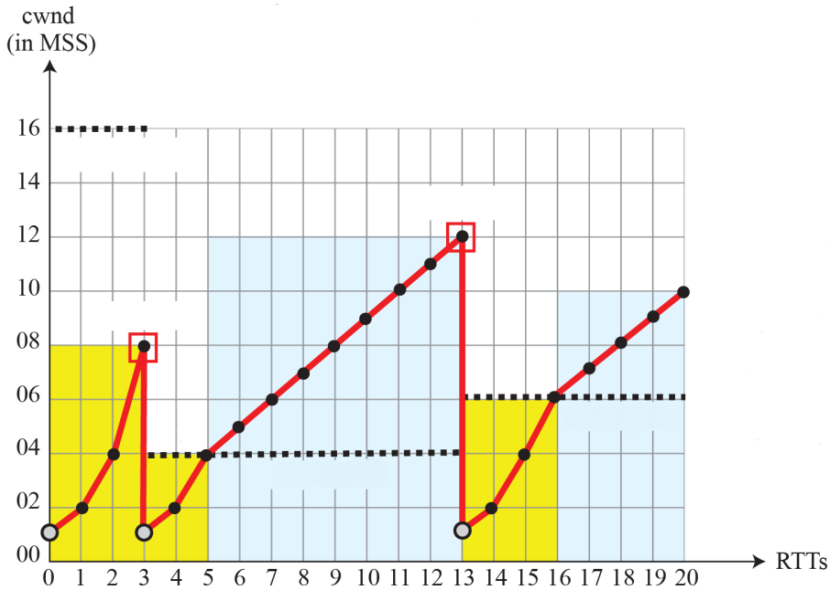
   d) Go-Back-N allows the receiver to request retransmission of specific lost packets, while Selective Repeat retransmits the entire window.

True/False:

1. Selective Repeat sender window size is 1. [T / F]
2. Selective Repeat is simpler to implement than Go-Back-N. [T / F]

Q2: **[10 Marks] [CLO 3]**

Refer to Diagram below and answer the following questions:



(1) The diagram shows which TCP (Reno or Tahoe)?

(2) What happened at transmission round 3 (i.e. at RTT = 3), i.e. state the reason / event?

(3) What happened at transmission round 5 (i.e. at RTT = 5), i.e. state the reason / event?

(4) What happened at transmission round 13 (i.e. at RTT = 13), i.e. state the reason / event?

(5) What happened at transmission round 16 (i.e. at RTT = 16), i.e. state the reason / event?

(6) Which state is the TCP in between transmission rounds (RTT):

(a) 0 & 3
(b) 3 & 5
(c) 5 & 13
(d) 13 & 16
(e) 16 & 20