National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Computer Networks	Course Code:	CS 3001
	Program:	BS (Computer Science)	Semester:	Spring 2024
	Duration:	15 minutes	Total Marks:	15
	Paper Date:	19-March-2024	Section	6A
	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. The _____field is used to detect errors over the entire UDP packet.
   a) UDP 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 are 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. TCP is a connectionless protocol. [T / F]
2. UDP header size is 8 bytes? [T / F]

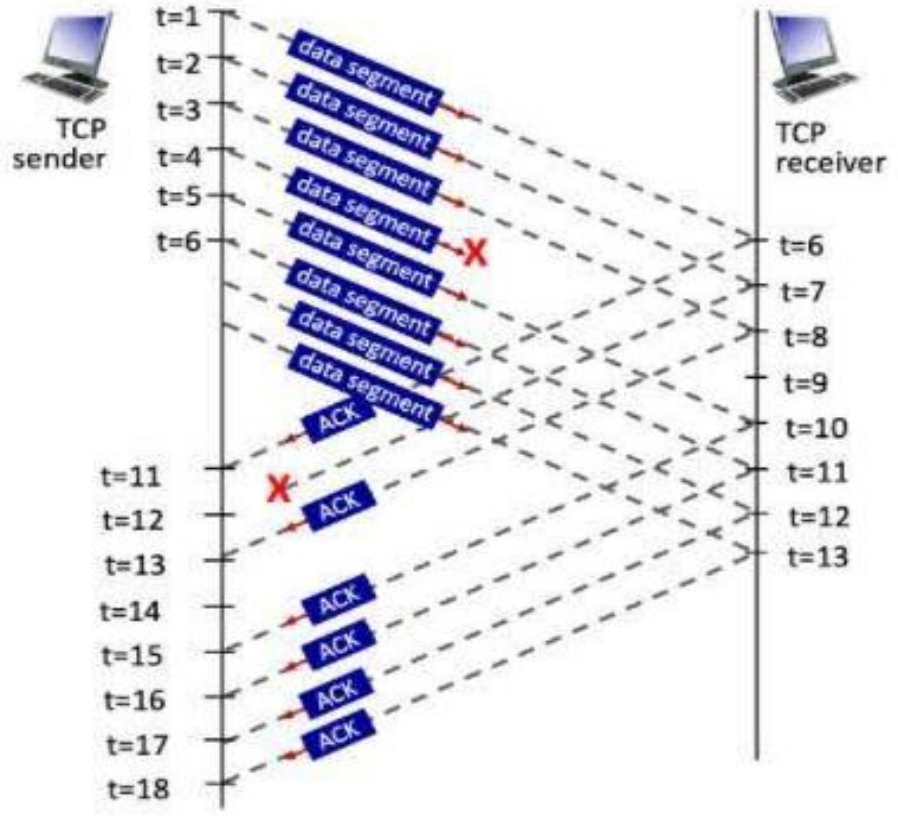
Question 2:

Consider the figure below, where a TCP sender sends 8 TCP segments at t = 1, 2, 3, 4, 5, 6, 7,8. Suppose the initial value of the sequence number is 0 and every segment sent to the receiver **each contains 100 bytes**. The delay between the sender and receiver is 5 time units, and so the first segment arrives at the receiver at t= 6. The ACKs sent by the receiver at t = 6, 7, 8, 10, 11, 12 are shown. The

TCP segments (if any) sent by the sender at t = 11, 13, 15, 16, 17, 18 are not shown.

The segment sent at t=4 is lost, as is the ACK segment sent at t=7.

[2 + 2 + 2 + 2 + 2 = 10 Marks] [CLO 3]



a) What is the sequence number of segment sent at t =2?

b) What is the ACK value carried in the receiver to sender ACK sent at t=6?

c) What is the sequence number of segment sent at t =3?

d) What is the ACK value carried in the receiver to sender ACK sent at t= 10?

e) What does the sender do at t=17? (Name the Event and Give Reason)