Department of Electrical Engineering
Assignment
Date: 07/05/2020
Course Details

Course Title: COMPUTER COMMUNICATION **Module:** 6

Instructor: SIR WAQAS **Total Marks:** 20

Student Details

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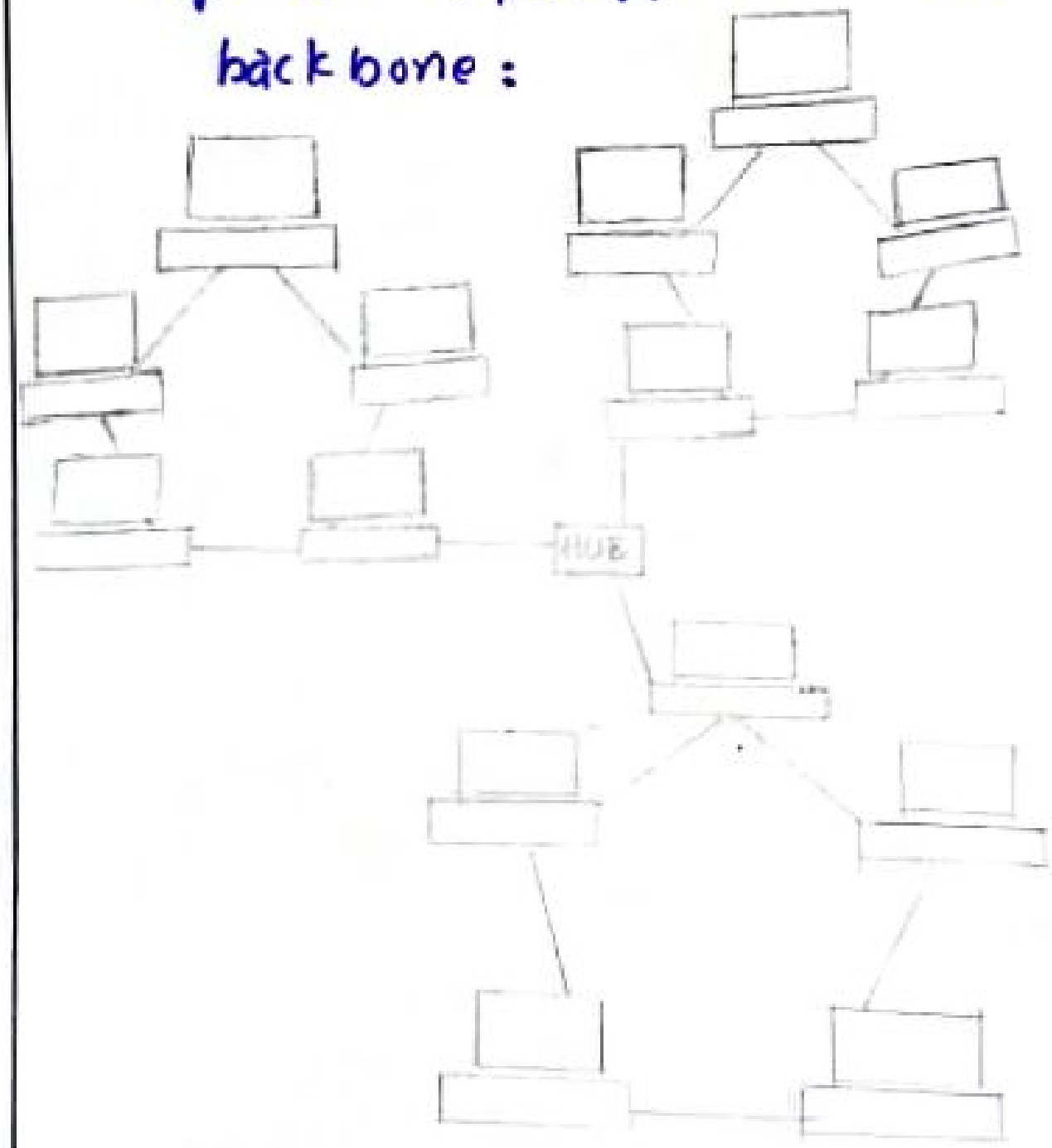
Q1.	(a)	Draw a hybrid topology with a star backbone and three ring networks also simulate the topology in Opnet.	Marks 4 CLO 1
Q2.	(a)	Suppose a computer sends a frame to another computer on a bus topology LAN. The physical destination address of the frame is corrupted during the transmission. What happens to the frame? How can the sender be informed about the situation?	Marks 4 CLO 1
Q3.	(a)	Suppose a computer sends a packet at the transport layer to another computer somewhere in the Internet. There is no process with the destination port address running at the destination computer. What will happen?	Marks 4 CLO 1
Q4.	(a)	Match the following to one or more layers of the OSI model: a. Reliable process-to-process message delivery b. Route selection c. Defines frames d. Provides user services such as e-mail and file transfer	Marks 4 CLO 1
Q5.	(a)	Draw the graph of the NRZ-L, NRZ-I and Manchester scheme using each of the following data streams, assuming that the last signal level has been positive. From the graphs, guess the bandwidth for this scheme using the average number of changes in the signal level. a. 00000000 b. 11111111 c. 01010101 d. 00110011	Marks 4 CLO 2

Q # 1 (a):

Draw a hybrid topology with a star backbone and three ring networks also simulate the topology in opnet.

hybride topology with star backbone :



Q # 2 (a)

Suppose a Computer send a frame e to another computer on a bus topology Lan. the physical distination address of the frame is Corrupted during the transmission. What happend to frame the situation.

If the Corrupted distination address does not match any station address in the network, the packet is lost.

If the Corrupted distination address matches one of the station the frame is delivered to the wrong station In this case however, the error detection mechanism, available in most data link protocale will

find the error and discard the frame In both cases the Source will Somehow be informed using one of the Data link control mechanisms

Q#3: Suppose a computer sends a art the transport layer to another computer somewhere In the internet there is no process with the distination port address running at the distination computer . What will happen?

The Sending computer is running three process at this time with port address a, b and c The recieving computer is running two process at this time with port addresses J, and k process in the Sending computer needs to communicate with process J in the recieving computer are using the same application FTP for example the port addresses are different because one is a Client programe and other is a Server programe to show that data from a process a need to rikover process J.

and not t the transport layer encapsulate encapsulates data from the application layer in a packet and adds two port addresses (a and j) source and distination. The packet in the transport layer is then encapsuled in another packet at the network layer with logical source and distination addresses (A and p) finally this packed in encapsulated in frame with the physically source and distinition address of the next hope. we have not shown the physically addresses because they change from hop to hop inside the cloud designed as the internet.

Q # 4:-

Match the following to one or more layer of the OSI Model:

(a) Reliable Process-to-Process is Delivery (Transport layer)

(b) Route Selection (Network layer)

(c) Defines frames (Data link layer)

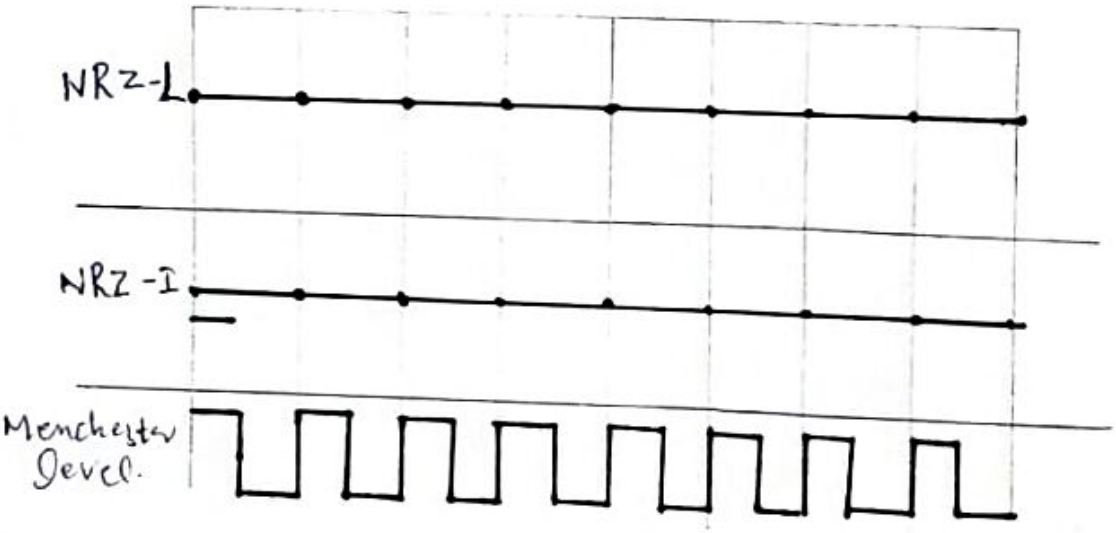
(d) Providing user services: (application layer)

(e) Transmission of bits across the medium (physical layer)

Q# 5:

Draw the graph of NRZ-L, NRZ-I and manchester scheme using each of the following Data streams assuming that the last signal level has been positive, from the graphs guess bandwidth for this scheme using the average number of changes in the signal level.

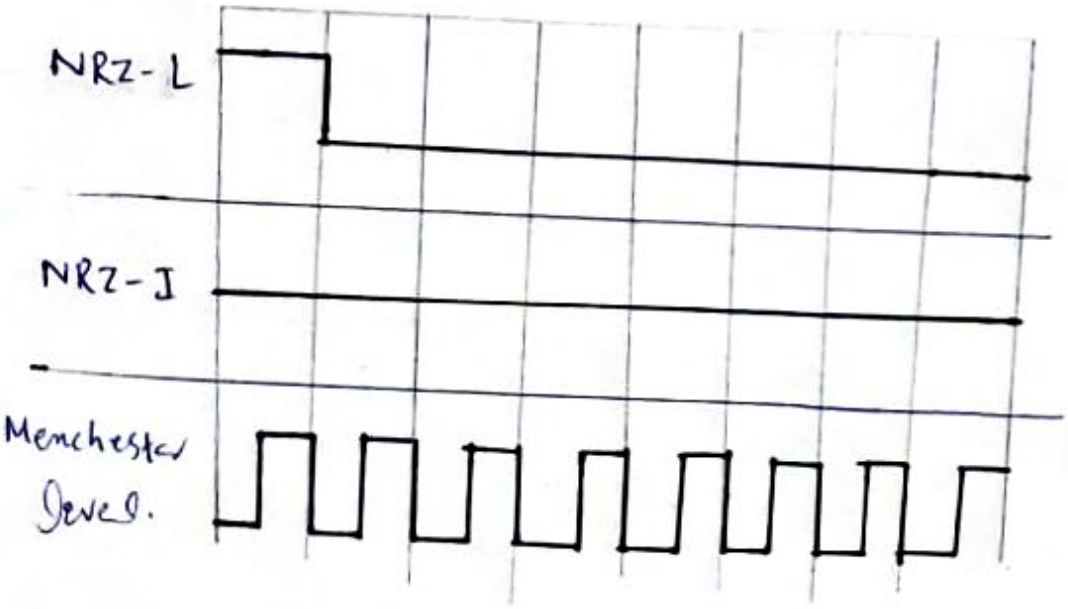
(a) 00000000



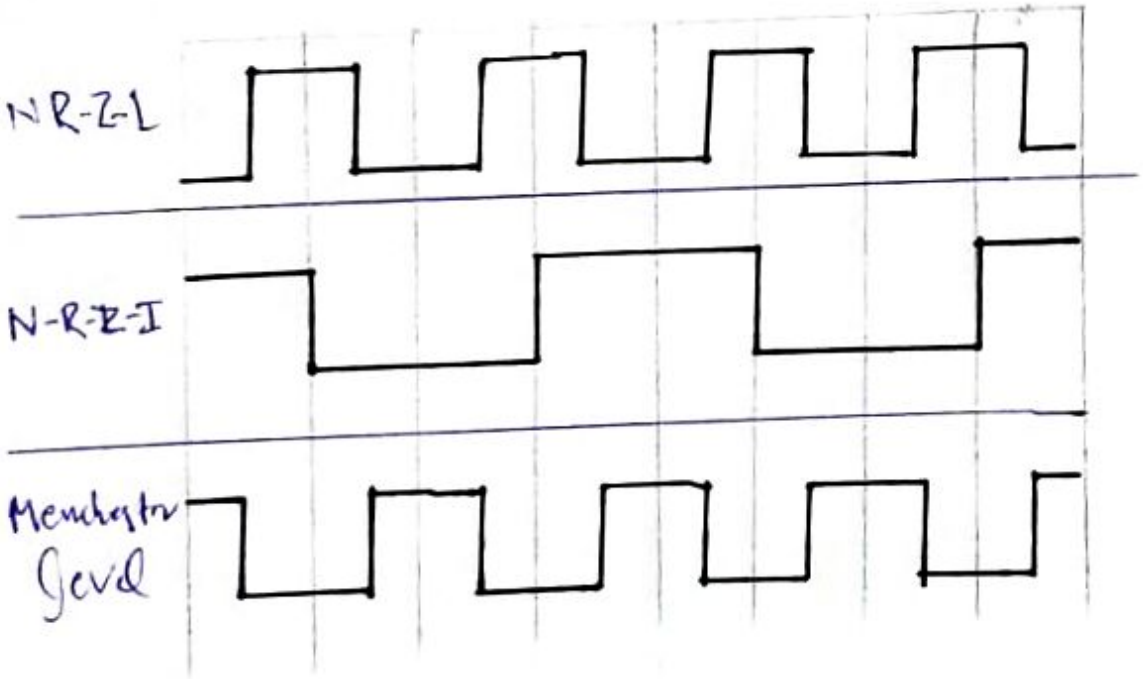
Average No of Changes = $(0+0+8+4)/4$

$= 3$ for $N = 8$

(B) (11111111)



(C) (01010101)



(d) (00110011)