

Department of Electrical Engineering

Assignment

Date: 07/05/2020

Course Details

Course Title: Computer Communication Network  
Instructor: \_\_\_\_\_

Module: \_\_\_\_\_  
Total Marks: 20

Student Details

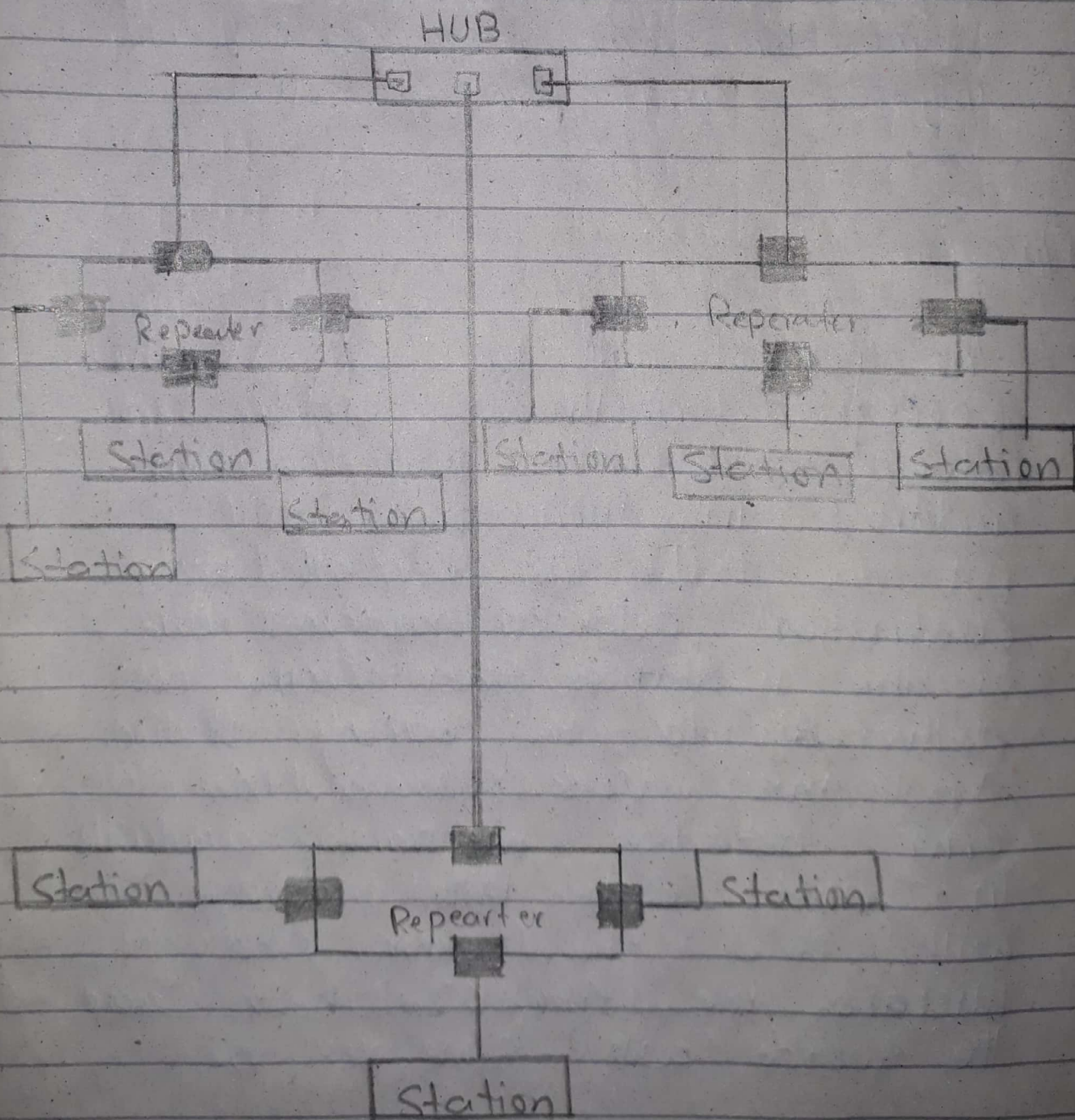
Name: Owais Afridi

Student ID: 13686

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

Q1: Draw a hybrid topology with a star backbone and three ring networks also simulate the topology in Opnet.

Answer:



Q#02

Suppose a Computer Sends a frame to another 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.

Answer:

The packet will be lost. If the corrupted destination address does not match any station address in the network.

If the corrupted destination address matches one of the stations, the frame is delivered to the wrong station. In this case, however, the error detection mechanism, available in most data link protocols, will find the error and discard the frame. In both cases, the source will somehow be

be informed using one of the data link control mechanisms.

The physical addresses have authority over the networks (LAN or WAN). The size and format of these addresses vary depending on the network. For example:

Ethernet uses a 6-byte (48 bit) physical address that is imprinted on the network interface card. LocalTalk (Apple), however, has a 1-byte dynamic address that changes each time the station comes up.

Q#3

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?

Answer:

The IP address and the physical address are necessary for a quantity of data to travel from a source to the destination host. However, arrival at the destination host is not the final objective of data communication on the internet. A system that sends nothing but data from one computer to another computer is not complete.

So in this case, Most protocols issue a special error message that is sent back to the source.

Q4 Match the following to one or more layers of OSI model:

(a) Reliable process-to-process message delivery:

⇒ Transport.

(b) Route Selection:

⇒ Network

(c) Defines frames:

⇒ Data Link

(d) Provides user services such as e-mail & file transfer.

⇒ Application.

Q5: 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) 000 000 00

(b) 111 111 11

(c) 01 01 01 01

(d) 00 11 00 11

For NRZ-L

(a) 000 00000

HHH HHHHH

(b) 111 11111

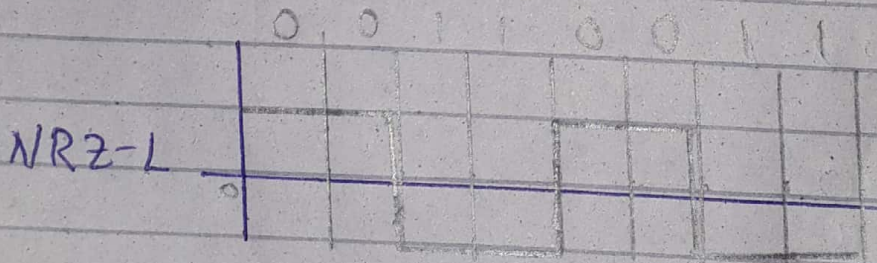
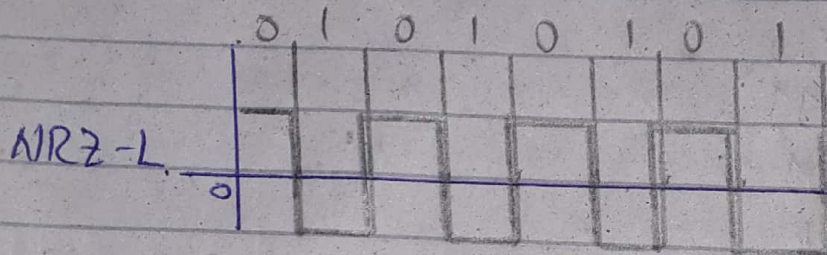
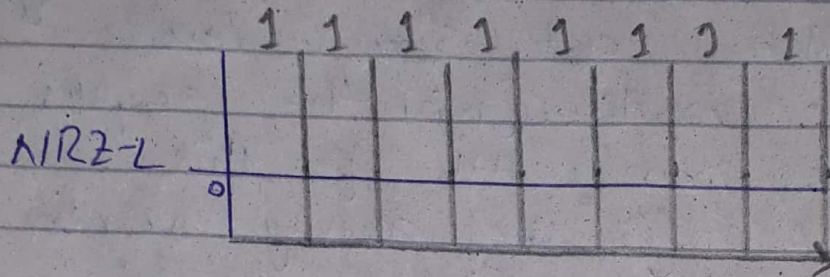
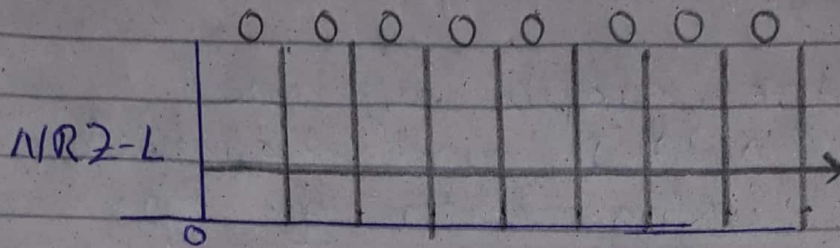
LLLLLLL

(c) 01 01 01 01

HLHLHL HL

(d) 00 11 00 11

HHLLHLL



Now For NRZ-I

(a) 00000000

HHHHHHHH

(b) 11111111

LH LHLHLH

(c) 01010101

HLHLHLHL

(d) 00110011 → HHLHLHLHL



Owais

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P# 08

