

Department of Electrical Engineering

Assignment

Date: 07/05/2020

Course Details

Course Title: Computer Communication Network **Module:** 6th
Instructor: Sir Waqas **Total Marks:** 20

Student Details

Name: Bakht Zaman Gohar **Student ID:** 13678

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. 0000000 b. 1111111 c. 0101010 d. 00110011	Marks 4
			CLO 2

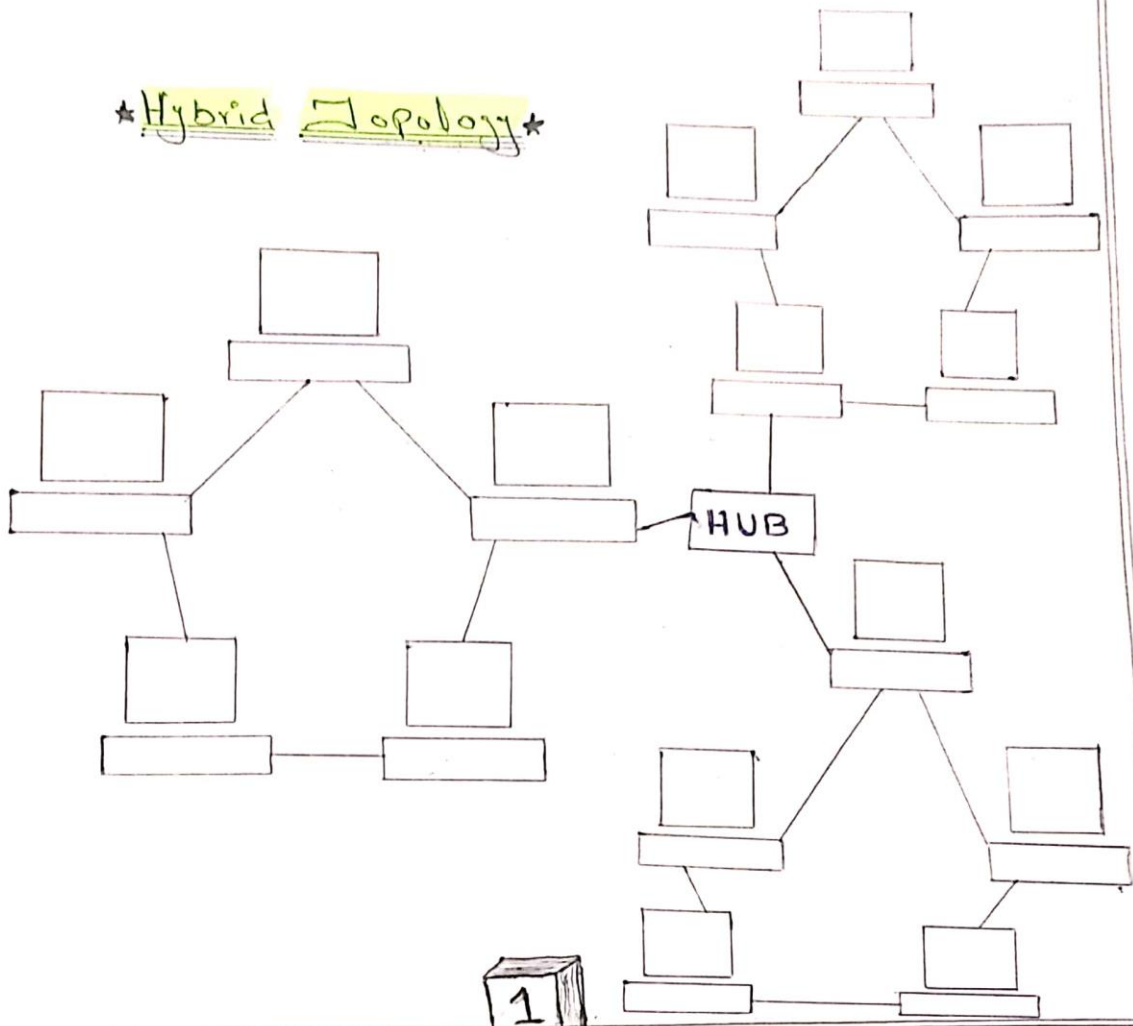
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Q1:- (a)

Hybrid Topology



Q2-(b)

Ans:- If the corrupted destination address does not match any station address in the network, the packet is lost. 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 & discard the frame.

In both cases the source will somehow be informed using one of the data link control mechanisms.

Before using the destination address in an intermediate or the destination node, the packet goes through error checking that may help the node find the corruption & discard the packet.

Normally the upper layer protocol will inform the source to resend the packet.



Q3-(a)

Ans:- ~~If the physical layer communication~~

Most protocols issue a special error message that is sent back to the source in this case. If the physical layer communication is direct between devices. At the higher layer communication must move down through the layers of sending device over the receiving device & also the backup through the layers. Each layer on sending device will add its own

information to the message received by that layer just allow it passes the whole packets to the layer. &

The process at each machine that communicate at the given layer, physical layer has direct links b/w two devices while the other layers have to pass into down to the layer have to pass & the receiver device uncorrupted the message at each layer.

Q4:- (a)

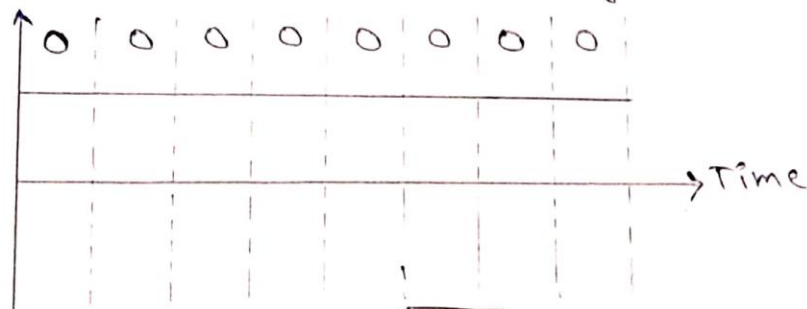
Ans:-

- a) Reliable process to process message delivery \Rightarrow Transport layer
- b) Route selection \Rightarrow Network layer
- c) Define frames \Rightarrow Data link layer
- d) Provides user services such as e-mail & file transfer \Rightarrow Application. layer

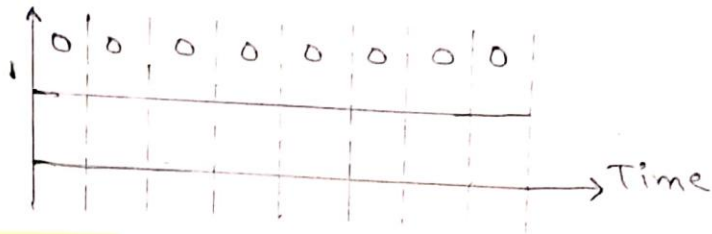
Q5:- (a)

a) :- (00000000)

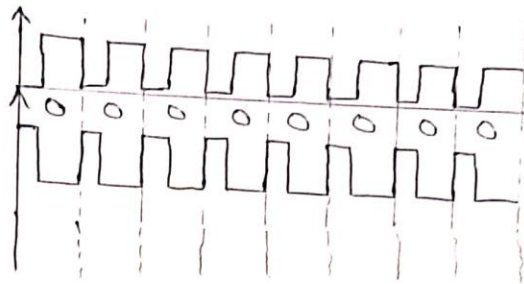
* NRZ-L If there is a long series of 0's or 1's in NRZ-L, the number changes is "0".



* NRZ-I

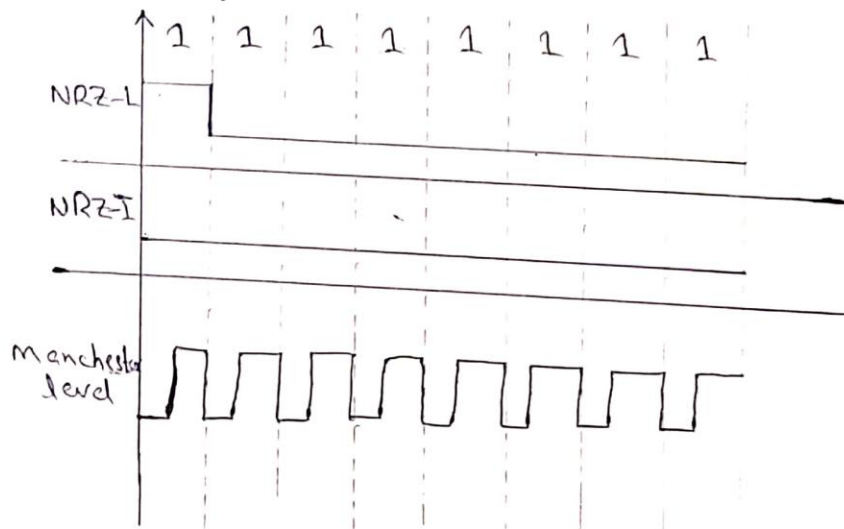


* Manchester level

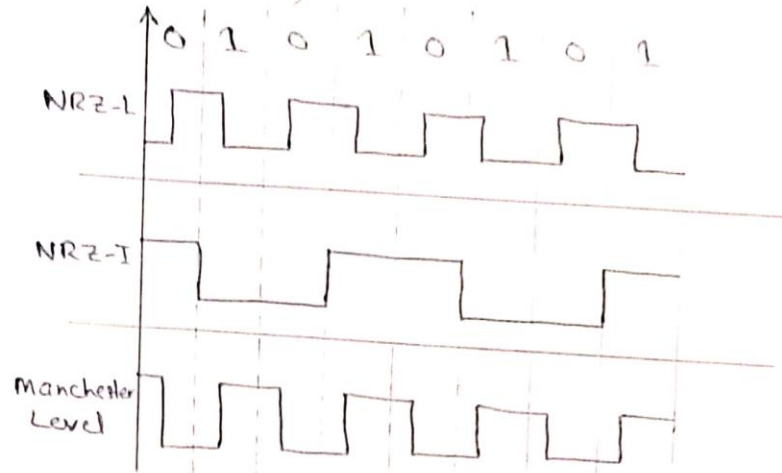


average no. of changes = $(0+0+8+4)/4$
 $= 3$ for $N=8$

b) (11111111)



c) (01010101)



d) (00110011)

