

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

Course Details

Course Title: Computer Communication Network
Instructor: _____

Module: _____
Total Marks: 20

Student Details

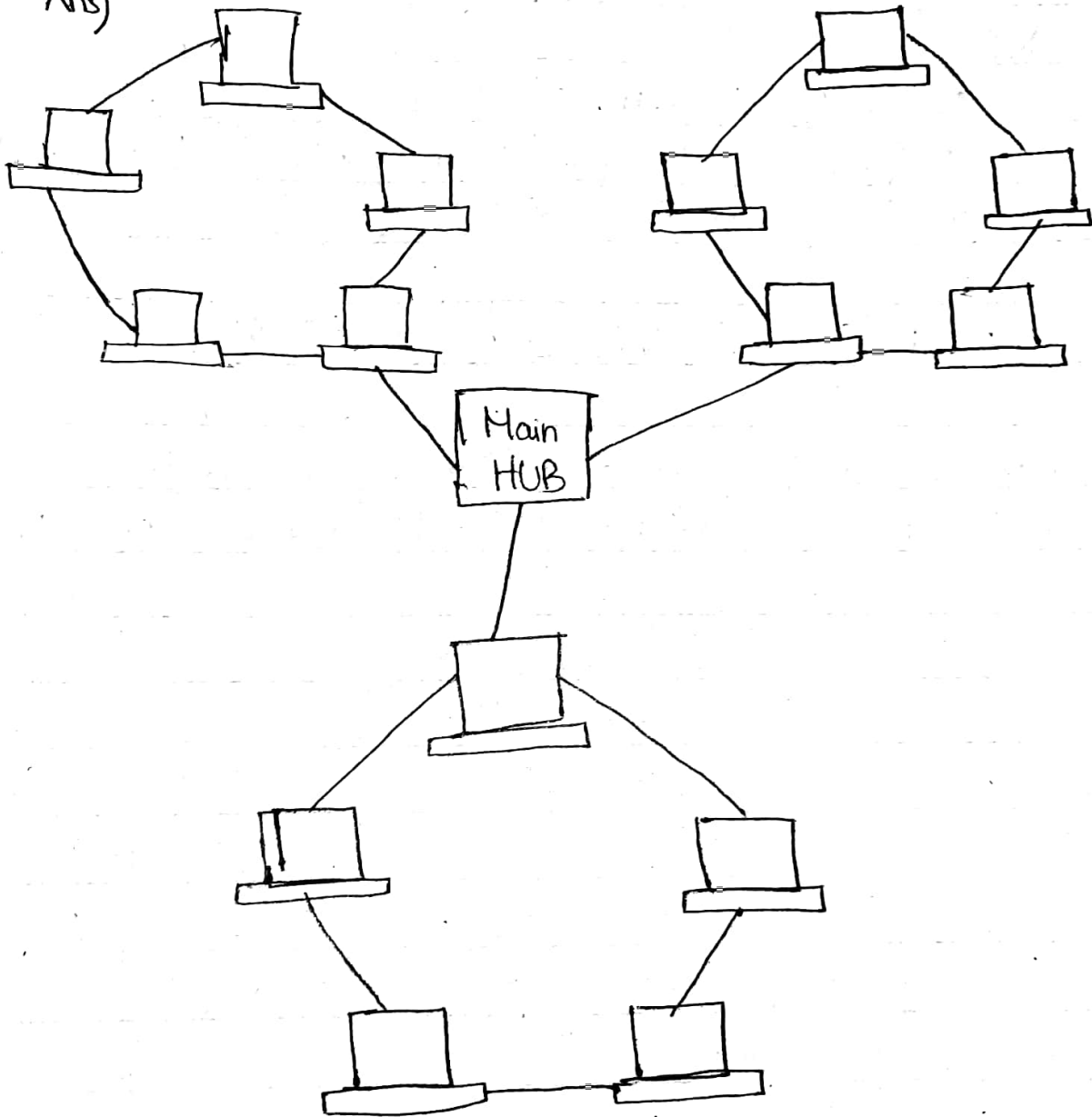
Name: _____

Student ID: _____

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

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Subject:- CCN

Q1)
Ans)



Hybrid Topology with star
backbone and three ring network

(2)

Q2) Ans)

If the corrupted destination address does not match any situation 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 mechanisms, available in most data link protocols, 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. The packet then goes through error checking that may help the node find the corruption with high probability calculations and discard the packet. Normally the upper layer protocol will inform the source to resend the packet.

Q3) Ans)

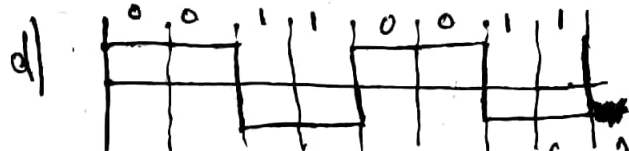
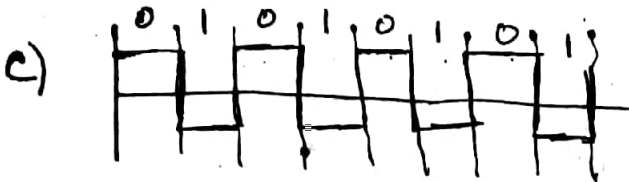
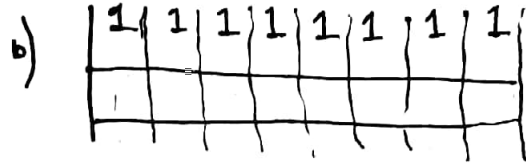
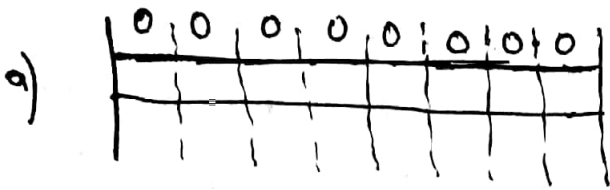
Most of the protocols that are being used by the network will popup a special error message that will be sent back to the source in the correct case.

Q4) Ans)

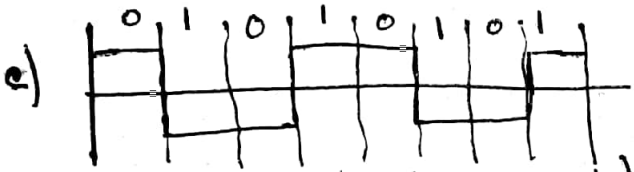
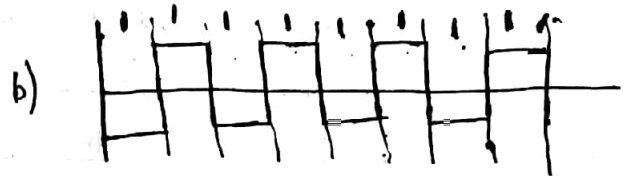
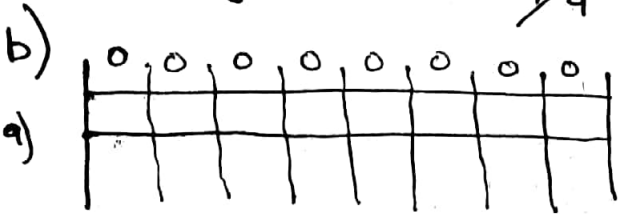
- a) Reliable process to process message delivery (Transport Layer)
- b) Route selection (Network Layer)
- c) Defines frames (Data Link Layer)
- d) Provides user services such as e-mail and file transfer (Application Layer)

Question 5)

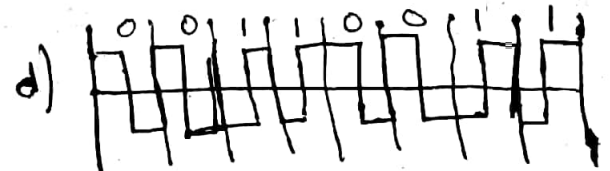
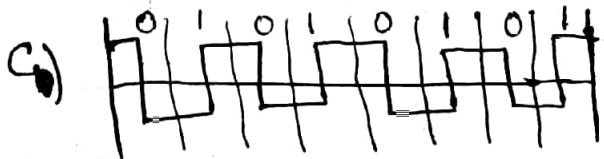
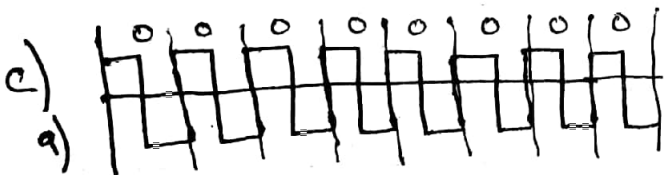
a) NRZ-L



Avg changes = $(0+0+8+4)/4 = 3$ $N=8$ $b/w = (\frac{3}{8})N$



Avg changes = $(0+9+4+4)/4 = 4.25$ $N=8$
bandwidth $B \rightarrow (\frac{4.25}{8})N$



Avg Changes = $(16+8+12+12)/4 = 12$ $N=8$
bandwidth $\rightarrow (\frac{12}{8})N$