

Department of Electrical Engineering

Assignment

Date: 07/05/2020

Course Details

Course Title: Computer Communication Network

Module: _____

Instructor: _____

Total _____

Marks: 20

Student Details

Name: Syed M Zahoor

Student ID: 12595

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

Course Title: CCN

①

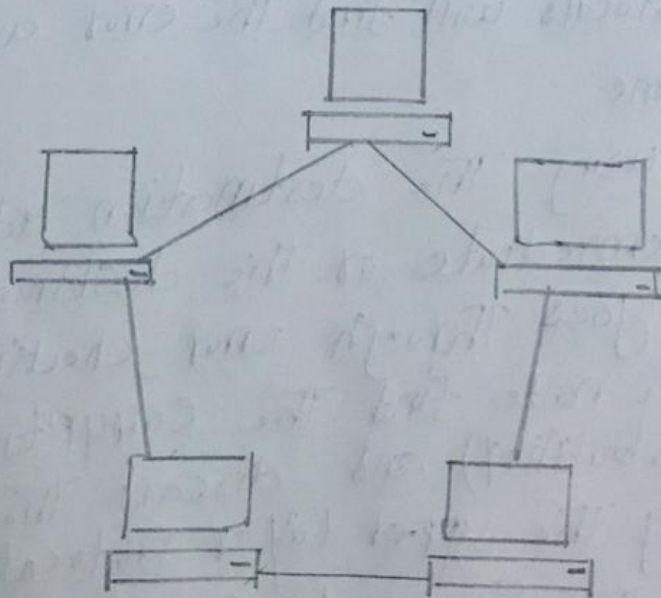
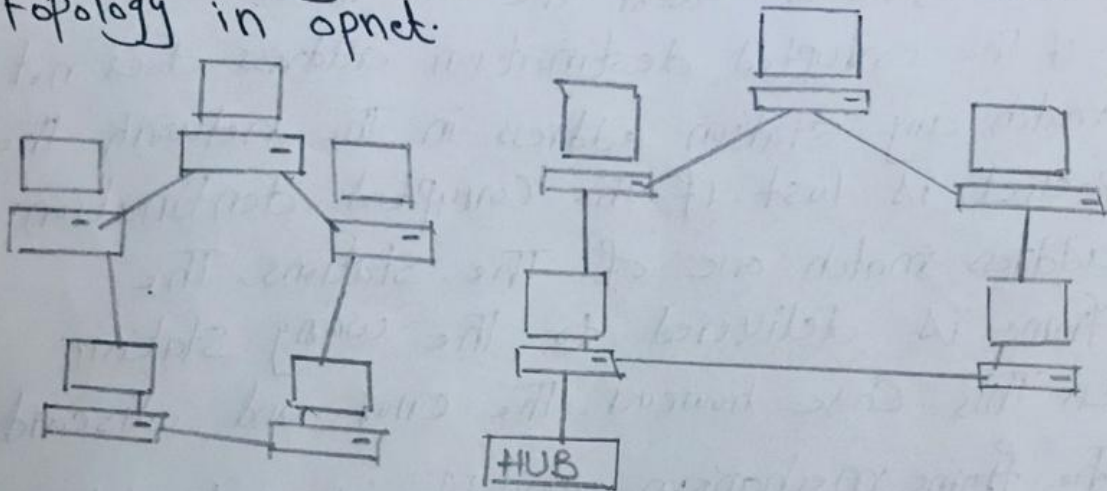
Assignment:

Name: Sped. Muhammad Zahed

108-12595

Q2 Draw a hybrid topology with a star backbone and three ring networks also simulate the topology in opnet.

Ans



Q3) 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?

Ans:- If the corrupted destination address does not match any station address in the network the packet is lost. If the corrupted destination address match one of the stations, the frame is delivered to the wrong station. In this case, however, the error and discard the frame mechanism, available in most data link protocols will find the error and discard the frame.

* 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 (with a high probability) and discard the packet. Normally the upper layer protocol will inform the source to resend the packet.

* All nodes receive all packets on a Ethernet bus network. Unless the address in

the destination field matches their own, the packet is ignored. As for the sender is concerned, because no other node acknowledges the packet the usual algorithm is to resend the packet after a certain time in which the packet was not acknowledged.

(3)

Q3
Ans. Transport layer is responsible for process (source) to-process (destination) delivery of entire message, whereas network layer oversees host (source)-to-host (destination) delivery of individual packets across multiple links. The processes at each machine that communicate at a given layer. Physical layer has a direct link b/w 2 devices while other layers have to pass the information down to the layer on the sender device by adding extra bit at each layer and the receiver device unwraps the message at each layer moving upwards till it finally reaches the corresponding communicating layer.

All the physical layer communication is direction b/w devices. At the higher layers however communication must move down through the layers on sending device, over to receiving device, and then back up through the layers. Each layer in the sending device adds its own information to the message it receives from the layer just above it and passes the whole package to the layer just below it. At layer 1 the entire package is converted to a form that can be transmitted to the receiving device. At the receiving machine, the message is unwrapped layer by layer, with each process receiving and removing the data meant for it.

(4)

④ Match the following to one or more layers of the OSI model:

① Reliable Process-to-Process message delivery:-
Transport Layer (Layer 4)

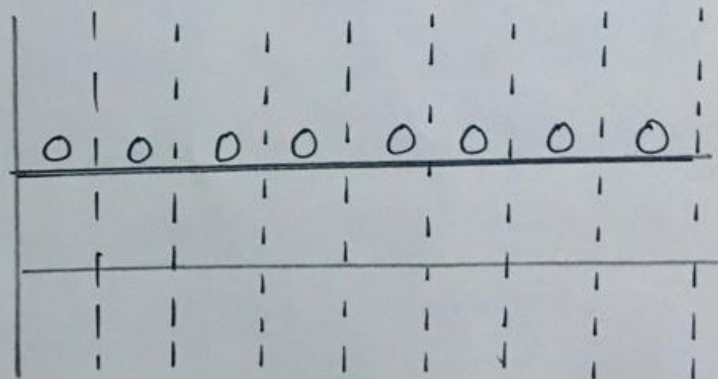
② Route Selection
Network Layer (Layer 3)

③ Define frames
Data Link Layer (Layer 2)

④ Provides user services such as email and file transfer
Application Layer (Layer 7)

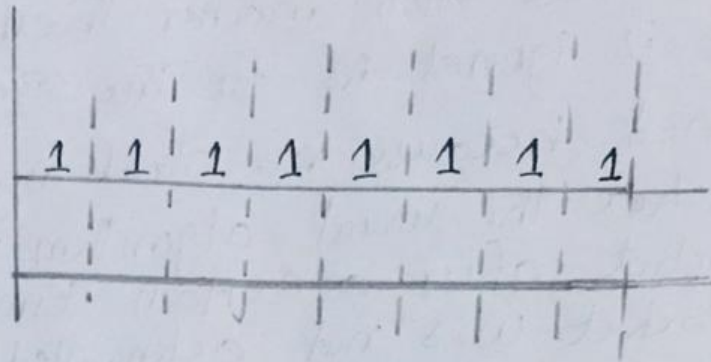
~~⑤~~ ⑤ a

① 00000000

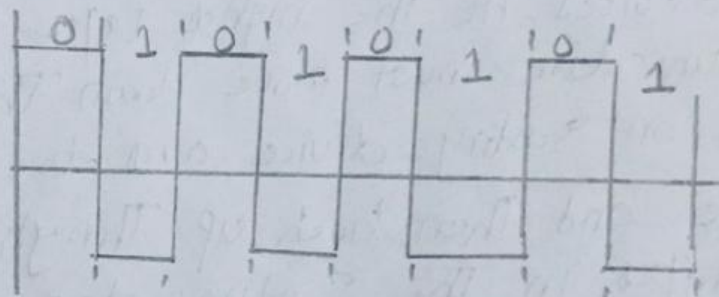


b) 11111111

5



c) 01010101



d) 00110011

