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section : A

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Ans to the Q.NO: 01 (a)

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X = 7 + 1 = 8

Y = 0 + 1 = 1

In mesh topology the link we may need

$$\frac{8(8-1)}{2}$$

$$= \frac{8 \times 7}{2}$$

= 28. We need 28 link.

In Star topology the link we may need:-

there is one computer with the hub.

So we need one I/O port to be connected with the hub with one link.

If I choose, I will go for mesh topology.

Because it is the more secure network.

All the line in this topologys are point-to-point and dedicated line.

When we try to send some information

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from one device to another theres no chance for third party. also theres no traffic issue. And it is also a robast topology. So If one computer get down others can work properly. So I will go with mesh topology.

(b)

If I want to communicate with my friend I will choose ~~full~~ Half duplex data flow for my communication.

Because ~~Half~~ duplex communication is like two-way street with ~~traffic~~ one at a time flowing in ~~both~~ both directions at ~~the same time~~. So ~~we~~ when we will communicate ~~we can both~~ one ~~talk and listed~~. will talk and others will listen because we have a poor bandwidth channel. So ~~we ha~~ I have to use half duplex.

One advantages and disadvantage of half duplex :-

1. Both devices can send and receive data, One at a time

2. The disadvantage in half duplex mode is that the other device cannot send data until it receives the data which is already transmission.

One ~~dis~~ advantage and disadvantage of half duplex :

1. Data can be sent and receive on both sides

2. No proper bandwidth utilization as the same line is used for sending and receiving data at the same time.

Ans. to the Q.NO:-02

(b)

"Like Data link layer, Error control and flow control are also performed in transport layer in end-to-end rather than on single link."

In data link layer we see that the error control and flow control are performed. Also in transport layer error control and flow control happen. Because when segment went from process to process the flow control ensure to maintain the flow end to the process. And when all the segment are gone process to process the Error control sight make sure that all the segment is in serial sequence. So that there

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er conflict. Transport layer do this process to process till the end to end. Because that way we can transmit the data.

(a)

$X = 7^2 \bmod 6$

$= 49 \bmod 6$

$= 1$

$Y = (1+1) \bmod 6$

$= 2 \bmod 6$

$= 2$

PC1 and PC2

MAC of B	Mac of n10	IP of B	IP of C	6000	7000	Data	T2

Mac of n11	Mac of n21	Ip of B	Ip of C	6000	7000	Data	T2

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Mac of B	Mac of C	Ip of B	Ip of C	6000	7000	data

Ans to the Q.NO:04

(a)

The difference between bandwidth and throughput ~~and~~ are :-

- throughput is an actual measure of how much data is successfully transferred from source to destination and bandwidth is a theoretical measure of how much data could be tranferd from source to destinat

(b)

$X = 7 + 1 = 8$

$Y = 0 + 1 = 1$

Bandwidth $= 8\,MHz = 8 \times 10^6\ Hz$

$SNR = 10 \times 1 = 10$

Bit rate $= (8 \times 10^6) \log_2 (1 + 10)$

$= (8 \times 10^6) \log_2 11$

$= 27\ Mbps$

From Nyquist formula

$27 = 2 \times 8 \times \log_2 L$

$\Rightarrow 27 = 16 \times \log_2 L$

$\Rightarrow L = 12.9$

$= 8$

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