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course code: CSE 303

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Roll - 14

sec - A.

"MID exam"

Data:- 25.8.20

Ans to the QNO-1

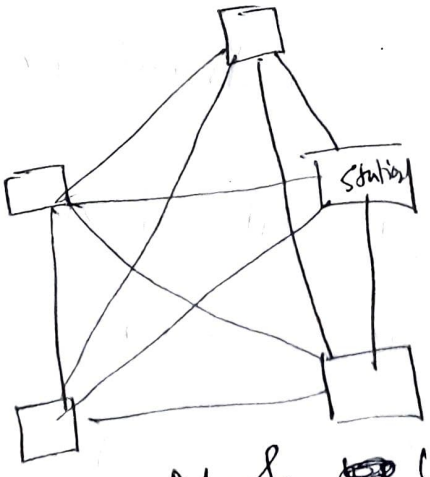
My ID is = 14.

then, $x = 4+1 = 5$

$y = 14$

$y = 1+1 = 2$

For Mesh topology I have 5 computers for link. Mesh topology Means~ Dedicated point to point link to every other nodes. and for Mesh topology with n nodes I need $n(n-1)/2$ links so, I have 5 computer. so, for 5 computer I need $5(5-1)/2 = 10$ links.



Mesh topology

For ~~y~~ I have 2 PC and I need to connect it with Star topology. In star topology a Hub is need and pc or devices are connected with the hub point to pointly and, In star topology I need n: a links for Maintain it. so for 2 computer i need only 2 links.

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if I need to choose between this two network for more security. I obviously choose Mesh topology. cause there are more compu inthere. In Mesh No traffic, robust, and security & isolation problem occur. But In Star topology All devices are equally connected with single hub so if hub has some problem the hole network will hampered.

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Ans to the Q no - 1-b

Data flow :- Data flow means the direction of Data.

Half Duplex :- if there are two devices for communication. Both transmit and receive can be possible. But not at the same time. if one Devices is passing Data the other have to wait for receiving Data. And after it finishes then the other can start. so, Half Duplex.

advantage : 1. easy to communication.
2. Cheap in cost.
3. Data redumption will not happen.
4. walkie-talkie, CB radio.

disadvantage : 1. not able to communicate with long distance.
2. Data redundancy can happen.

Full Duplex: full duplex can communicate and transmit and receive simultaneously. Like a two way street. like telephone.

advantage: 1. both side can communicate simultaneously.

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2. Data flow and redundancy can not happend.

Disadvange: 1. devices are cost move.

2. if connection is slow Data flow can be hampered.

Ans to the Q No-4 (a)

Here,

X is the last Digit of ID so 4 + 1 = 5

Y " " 2nd " " 1 + 1 = 2

Bandwidth x = 5

SNR = 10 X 2 = 20

first we use the Shannon formula to find our upper limit.

$$C = B \log_2 (1 + SNR)$$

$$= 5 \times 10^6 \log_2 (1 + 2)$$

$$= 9 \times 10^6 \times \log_2 3$$

$$= 4515449.935 \text{ bps.}$$

$$= 4.515 \text{ Mbps.}$$

P.T.O

Then we use the Nyquist formula to find the number of signal level. 6 Mbps is the upper limit. for better performance we choose something lower

Like 4 Mbps ⇒ 4 Mbps = $2 \times 5\text{MHz} \times \log_2 L$

$\Rightarrow$ 4 Mbps = $10\text{MHz} \times \log_2 L$

$= 0.40 = \log_2 L$

$\rightarrow 1.3287$

Ans to the Q NO-4(b)

(B)

Bandwith:

-> it measures network performance

-> two different measuring value { 1. bord with inter
2. Band with in bits per sec.

=> bandth in hertz is the range of frequency

=> bandwith can also refer to the number of bits per second that a channel on a netwook can transmit.

Throughput: -> It is measure of how fast we can actually send Data through netwon

-> Band with in bit per seond and thoughpu are different.

-> the Bandwith is a potential measurement of a link the throughput is an actual

measurment of how fast we can send data.

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Ans to the ques -2

My ID is = 14

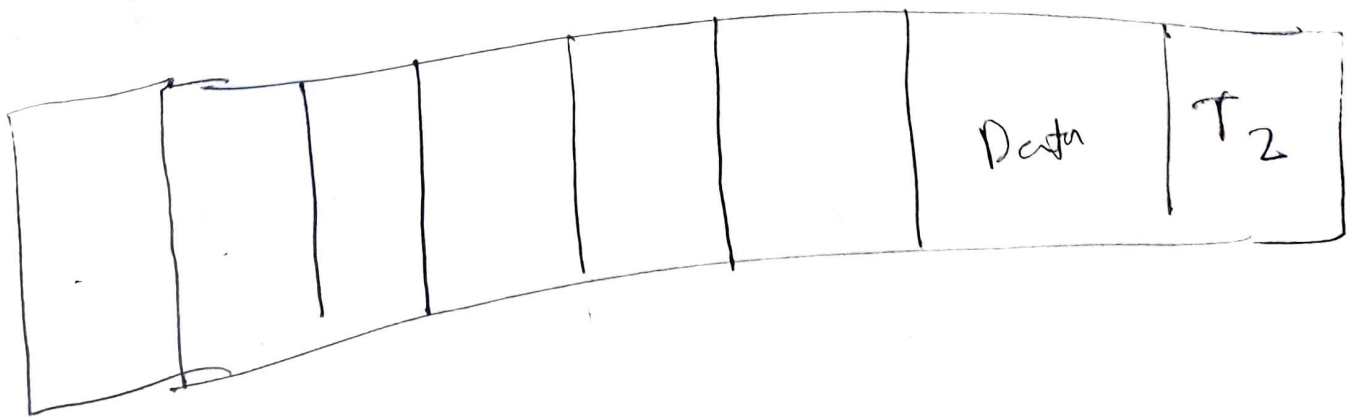
$x = (4)^2 \bmod 6$

$= 16 / 6$

$= 4$

$y = 4+1 \bmod 6 = 5$

Im in PC 4 and my friend will be 5.



Ans to the q no - 25 (b)

In Data link layer - it's one of the Duty is to flow control and one of the is error control.

flow control :- if the rate of which Da are absorbed by recieven is less than the rate of which data are produced in the sender.

Error control: adds reliability to the Physical layer by adding Mekhanism to detact and retransmition of lost frames.

this two are also performed in transport layer.

like as Data link layer transport layer is responsible for flow control. flow control is performed end to end rather than across a single lik.

* Error control at this layer is performed process to process rather than acceross single link.

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