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Section : A
Semester : 1st
Year : 3rd
Course Code : CSE 303
Course Tittle : Data communication
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Ans to the ques no: 4

(a) My ID is 18101080

So,

$x = 0+1 = 1$

$Y = 8+1 = 9$

Here,

SNR = ~~10×4 = 40~~ $10 \times 4 = 40$

Bandwidth = 1MHz

Now,

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

$= 10^6 \log_2(1+40)$

$= 10^6 \log_2 41$

= ~~5.3~~ 5.4 mbps.

The shannon formula gives us 5.4 mbps, the upper limit. For better performance we choose something lower 4 mbps.

Then we use the Nyquist formula to find the number of signal levels.

Bit rate = 2 * bandwidth * $\log_2^L$

4Mbps = 2 * 1MHz * $\log_2^L$

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$L = 4$.

(b)

Bandwidth	Throughput
(1) Bandwidth is theoretical measure of how much data could be transferred from source to destination.	(1) Throughput is an actual measure of how much data is successfully transferred from source to destination.
(2) It measure speed.	(2) It measures only measures indirectly related to speed.
(3) It measurement unit is Bits	(3) It's unit is bits per second
(3) It's objective is transfer data	(3) It's objective is to communicate

- Can throughput be greater than bandwidth:

No, throughput can't be greater than bandwidth.

Throughput can only send as much as the bandwidth will allow and it's usually less than bandwidth. Some of reason or some factors that reduce the overall throughput

Ans to the ques no 1(a)

Here, my ID is 18101036

now,

$x = 0 + 1 = 1$ ✓

$y = 3 + 1 = 4$ ✓

For mesh topology,

we need, ~~x~~ ~~y~~

$x\{(x-1)/2\}y$

$= 1\{(1-1)/2\}$

$= 0$

$n(n-1)/2$

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We need 0 cable link for mesh topology.

And for star topology we need, $y = 4$ cable link. ✓

I would like to prefer star topology.

Because there is a central hub. So each of the nodes are station independently connected to the central hem, if one node or two or more go down the rest of the network will functioning. Besides, star topology is more secure than mesh topology. It's stable and secure Network layout.

(b) I'll choose full duplex data flow for my communication.

Because in this communication the sender and receiver can both transmitted and receive at the same time. It's transmission mode is like a two way road. which traffic can flow in both direction at the same time.

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Advantage of full duplex:

- No Relay in communication
- Both can send and receive data at the same time.
- Fasten throughput speed

Disadvantage of full duplex:

- No proper bandwidth
-

Advantage of half duplex:

- Whole bandwidth can be utilised as at a time only one signal transmits.

Disadvantage of half duplex:

- Delay communication
- other device can not send data until it receives the data which is already in transmission.

Ans to the ques no-2(b)

Transport layer protocols perform error direction and connection end to end. end to end, flow and error control is carried out in transport layer.

Flow control coordinate that amount of data that can be sent before receiving an acknowledgment. Transmission as packets and making sure the packet get from one to other. Flow and error handling are integrated for convenience. It guarantees a reliable end to end connection.

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(a) my ID is: 18101030

$X = (0)^2 = 0$

$Y = (1)^2 \bmod 1 = 1$

$Y = 1$

So, frm in PC0 and my frwrd frm PC1.

Sender MAC	Receiver MAC	Sender IP	Receiver IP	Sender

P3-16

Port no

Sender mac	Receiver Mac	Sender IP	Receiver IP	send	Receiv	Port	Trailer
Mac of A	Mac of B	IP of A	IP of B	6000	7020	[illegible]	Trail

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