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Roll No. : 43

Year : 3rd

Semester : 1st

Course Code : CSE 303 (A)

Course Title : - Data Communication

Date : 25-08-2020

Ans. to the a.no. 01

(a) My id is = 18101043

so, $X = 3 + 1 = 4$

and $Y = 4 + 1 = 5$

For mesh topology,

we need, $\{n(n-1)/2\}$ cable link

$= 4(4-1)/2$

$= 6$ cable link

For star topology,

We need, $y = 5$ cable link.

According to the security level of Preferr & Mesh topology most. It is a

topology that dedicated point-to-point link to every other ~~on~~-nodes. There is also no traffic problems, easy fault identification and isolation. On the other hand Star topology is also dedicated point to point link but only to a central controller, called hub. The whole connection depend on the hub. So, for all this reason I prefer Mesh topology most.

b.1)

Between half duplex and full duplex data flow, I chose full duplex data flow.

8 Full duplex is a two-way communication. Transmitter and receiver happen simultaneously. The channel capacity must be divided between two directions.

One advantage and one disadvantage for half-duplex data flow.

Advantage: Both sender and receiver can transmit.

Disadvantage: The speed of half duplex is less as compare to the full-duplex mode of transmission.

For Full-duplex data:

Advantage: The speed of transmitting and receiving the data is faster in this mode.

Disadvantage: All network equipment ~~does~~ does not support full-duplex system.

Ans. to the Q. no. 4.

a) ~~Bandwidth, $B = X = 3$.~~

My ID = 18101043

Bandwidth, $B = X = 3 + 1 = 4 \text{ MHz}$
 $= 4 \times 10^6 \text{ Hz}$

$$\text{SNR} = 10^4 = 10^4 (4 + 1) = 10^5$$

$$= 50$$

First, we use the Shannon
 formula to find

upper limit,

$$C = B \log_2 (1 + \text{SNR})$$

$$= 10 \times 4 \times 10^6 \log_2 (61 + 50)$$

$$= 4 \times 10^6 \log_2 (111)$$

$$= \underline{2 \text{ mbps. } 2.2 \text{ mbps.}}$$

Signal level,

$$2 \text{ mbps} = 2 \times 4 \times \log_2 L$$

$$\therefore L = \log_2 L \cdot 8 = 2$$

$$\Rightarrow L = 2$$

bit Rate = 2.2 mbps and

Level = 2

b) Band width measures network performance and throughput measure how fast we can ~~see~~ actually send data through a network. At first glance, bandwidth in bits per second and throughput seem the same but ~~there~~ they are different. A link may have a bandwidth of B bps ; ~~be~~ but we

can only send T bps?. A

bandwidth is a potential measurement of a link ;

the throughput is an actual measurement of how fast

we can send data.

Throughput can not be

greater than bandwidth.

P-09

Ans. to the Q. no. 2

b | Like ~~data~~ Data Link Layer Error control and Flow control are also performed in ~~transport~~ layer in end-to-end rather than on one single link.

It is better to check end-to-end rather than on single link. If the Error control and Flow

control performed on every single link than it will take more time ~~and~~.

8 The sender transport layer ensures that message reach at the destination without any error.

a My id : 18101043

$$x = (3)^2 \mod 6 = 9 \mod 6 = 3$$

$$y = 1 \mod 6 = 1$$

So, 9 will be in pco

my friend will be in

PC 1.

Sender MAC	Receiver MAC	Sender IP	Receiver IP	Port no Sender	Port no Receiver	Data	Trailer
MAC of A	MAC of B	IP of A	IP of B	6000	7000	data	Trailer

0