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MID TERM

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Section : A

Semester : ~~3rd~~ 1st

Year : 3rd

Course Code : CSE 303

Course Title : Course Title

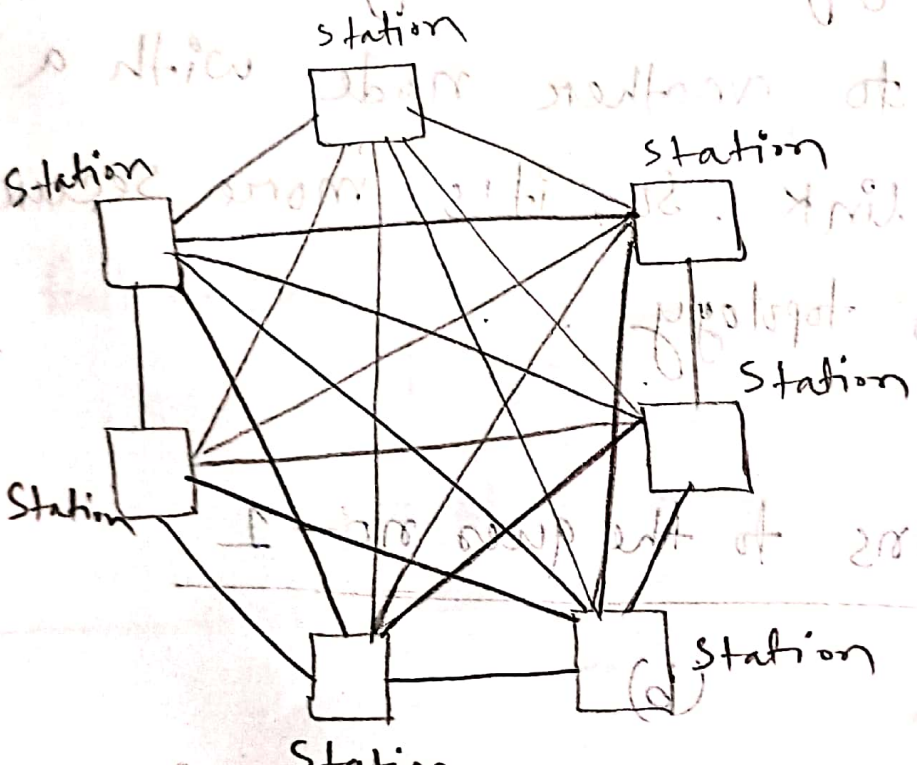
Date : 25-08-2020

Ans to the ques no-1

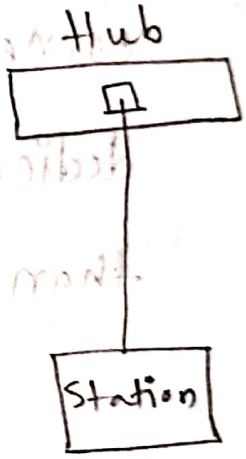
ID: 18101006 (a)

$x = 6 + 1 = 7$

$y = 0 + 1 = 1$



room 1



room 2

Node $n = 7$

$\therefore$ link needed $= \frac{7(7-1)}{2}$

$= 21$ link needed in mesh topology

only one link needed in star topology

for a secure network, between Mesh and Star topology, Mesh topology is more secure. Because in mesh topology, every node is connected to another node with a dedicated link. So, it is more secure than Star topology.

Ans to the ques no- 1

(b)

half duplex data connection is, where two way data communication is possible but not at a same time. full duplex is where communication is simultaneously.

So, I'll communicate with my friend using full duplex data communication.

	Advantage	disavantage
① Half duplex	Whole bandwidth can be utilised at a time	cannot communicate sender & receiver at a single time
② full duplex	It can send & receive data at a time	bandwidth is not properly used at a time

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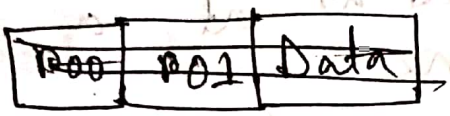
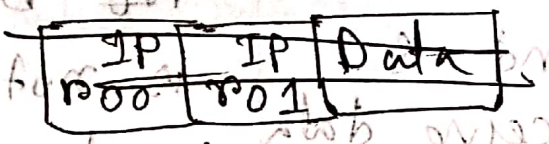
Ans. to the ques no-2

X = 0 , Y = 1

PC0 PC1





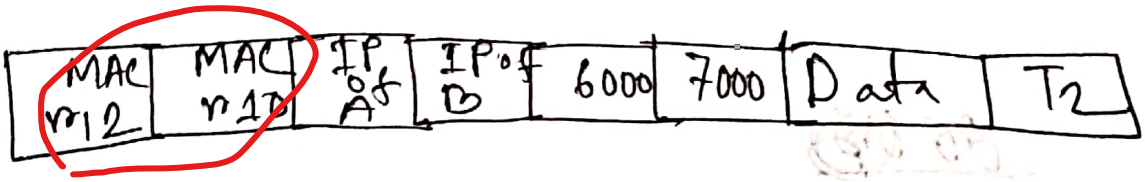
for 1st process :

MAC of P00	MAC of P01	IP A	IP B	6000	7000	Data	T2

for 2nd process :

MAC P02	MAC P12	IP of A	IP of B	6000	7000	Data	T2

for 3rd



2 — (b)

Ans:- Transport layer also perform error control & flow control as data link layer. Transport layer send message from one ~~port~~ process to another process. Data link layer ~~works~~ send message ; for one hop to another. Transport layer deliver message from input port to output port. ~~Transport layer also~~ Data-link take error control

from hop to hop. But for output port & input port error control, there is no transport layer works.

Ans to the ques no-04

(a)

$x = 6 + 1 = 7$

$y = 0 + 1 = 1$

Bandwidth $= 7\ MHz$

SNR $= 10 \times 1 = 10$

for Shannon formula,

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

$= 7 \times 10^6 \times \log_2(1 + 10)$

$\Rightarrow 7 \times 10^6 \times 3$

$\Rightarrow 24 \times 10^6$

$\Rightarrow 24\ Mbps$

Then we use Nyquist formula,

$16\ Mbps = 2 \times 7\ MHz \times \log_2 L$

$\frac{16 \times 10^6}{2 \times 7 \times 10^6} = \log_2 L$

$$1 = \log_2 L$$

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$$L = 2^1$$

$$= 2$$

4-(b)

Bandwith is diffrence between higher frequency & lower frequency while throughput is an actual measure of, how much data is ~~transff~~ transferred successfully from source to destination. ~~Other~~ On the other hand bandwidth is diffrence of lower frequency & higher frequency which ~~measure~~ of means how much data can be transferred from source to

destination. Throughput measure speed but ~~makes~~ bandwidth is indirectly related to speed, it makes internet fasters or slowers. But throughput can't be greater than bandwidth.

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