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Sec : A | Course Code : CSE 303

Course Title : Data Communication

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Ans to the Q.N - 1(a)

My ID is 18101004,

So, $X = 4 + 1 = 5$

and $Y = 0 + 1 = 1$

for, mesh topology, we need $\{x(x-1)/2\}$

cable link $= \{5(5-1)/2\}$

$= 10$ cable link

6

For, Star topology, we need $y = 1$ cable link.

According to the security level I prefer Mesh Topology. why?

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Ans to the Q. N - 1 (b).

I will choose full duplex data flow for any communication.

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

Advantage for full duplex:

* No delay in communication

Disadvantage for full duplex

* No proper bandwidth.

Advantage of half duplex:

* where bandwidth can be utilized as at a time only one signal transmits.

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Disadvantage (half duplex).

* Delay communication.

Ans to the Q.N- 2 (a)

My ID = 18101004

$X = (4)^2 \bmod 6 = 4$ ✓

$Y = 1 \bmod 6 = 1$

2 4+1

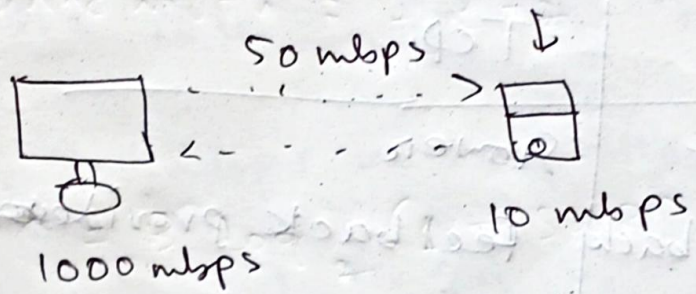
So I will be in pc 6 and friend will in pc 1.

Sender Mac	Reciever MAC	Sender IP	Receiver ID	Portline Sender
MAC of A	MAC of B	IP of A	IP of B	36000

Port time Receiver	Data	Time
data 7000	data	Time

Ans to the Q.N - 2(c)

Flow control: Flow control like as data link layer, transport layer is responsible for flow control. Flow control is performed end to end rather than across a single link.



Error Control: Error control at this layer is performed process to process rather than across across a single link. The sending transport layer make sure that the entire message arrives at the receiving trasport layer without error (damage, loss, duplication) it is usually

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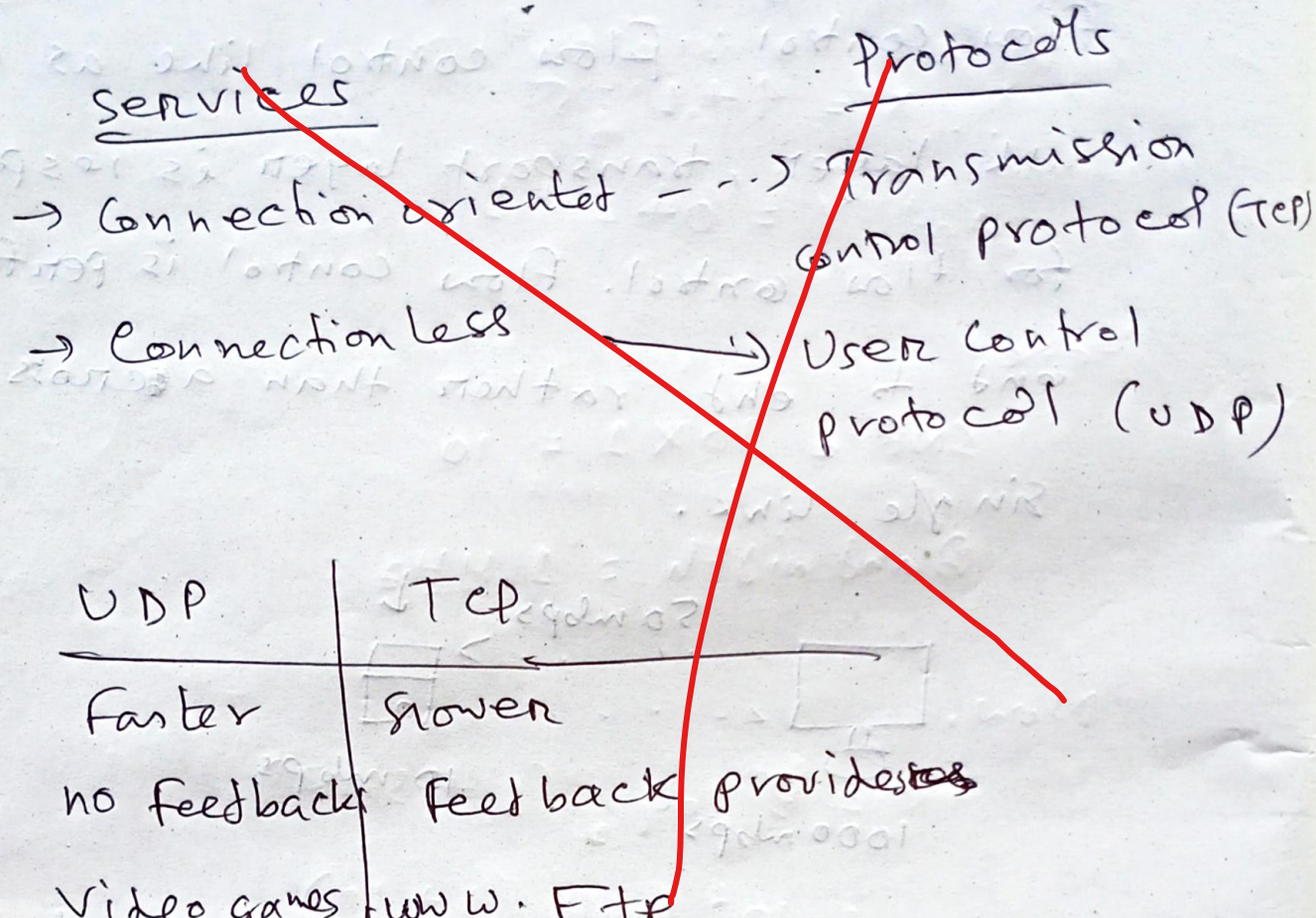
archieved through tetrans mission.



UDP	TCP
Faster	Slower
no feedback	Feedback provides
Video games	www. Ftp

Ans to the Q.N-4. (a)

Here, my ID is 18101004

$\therefore X = 4 + 1 = 5$ ✓

And $Y = 0 + 1 = 1$ ✓

Here

$SNR = 10 \times 1 = 10$ ✓

Bandwidth = 1 MHz

Now,

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

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

$= 10^6 \log_2 11$ ~~mbps~~

$\cong 3.4$ mbps

6 ✓

The Shannon formula gives us ~~$10^6 \log_2 11$~~ 3.4mbps, ~~the upper limit. for better performance we choose some thing lower mbps.~~

for better performance we choose something lower 3.4 mbps.

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

Bit rate : $2 * \text{bandwidth} * \log_2 L$

$3.4 \text{ mbps} = 2 * 1 \text{ mHz} * \log_2 L$

$2^{\cdot} = 3.4$.

Ans to the Q: N – 4(b)

Bandwidth	Throughput
Data capacity of a channel which can be transferred in specific period of time	Actual measure of data transferred over a specific period of time
Measurement unit is Bits	Measurement unit is Bits per second.
To transfer data	To communicate
Physical layer of OSI model	Any layer of OSI model
No dependency	Dependent on latency
Not impact by physical obstructions.	Highly impacted by external interference interference network devices. Transmission errors
Speed of water coming of tap in particular time	Actual flown ~~of~~ out of tap in particular time.