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Ans to the Q No 1 (a)

18101042,

X = 2 + 1 = 3

Y = 4 + 1 = 5

For Mesh topology $n(n-1)/2$

$= 3(3-1)/2$

$= 3$

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For star topology = One for each

= 5

We can find point-to-point connection in both mesh and star topology. But star topology is much simpler and less expensive to implement compared to mesh topology. Network security increases, as endpoints operate independently of each other. So I prefer star

topology for a secure network.

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Ans to the 1 (b)

In half duplex mode, both devices can transmit the signal, but one at a time.

In full duplex mode, both devices can transmit the signal at the same time.

Full duplex performs better than half duplex.

Advantage of Half duplex:

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

Disadvantage of Half duplex:

1) The other device cannot send data until it receives the data which is already in transmission.

Advantage of Full Duplex:

1) No delays in communication as both can send and receive data simultaneously

Disadvantage of Full Duplex:

1) No proper bandwidth utilization as the same line is used for sending and receiving data at the same time.

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Ans to the Q No 2 (a)

~~Me~~ I am in PC X

My friend is in PC Y

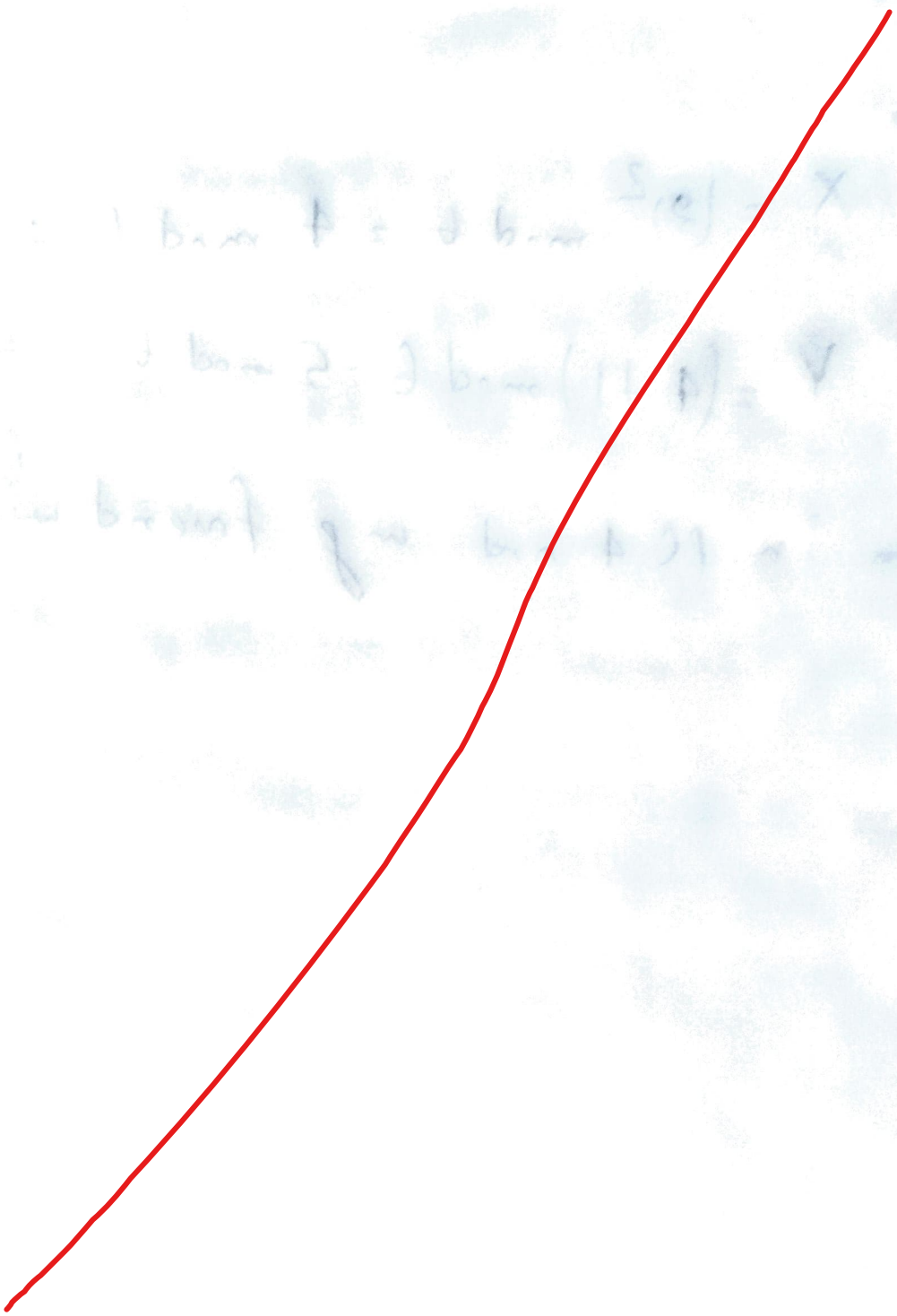
Here,

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

$$Y = (4+1) \bmod 6 = 5 \bmod 6 = 5$$

I am in PC 4 and my friend ~~will be in~~ is in PC 5

2/



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Ans to the Q No 2(b)

To ensune neliable communication, there needs to exist flow control. For managing the ammount of data the sender sends. And ennon control (that data arrives at the destination ennon free). For end-point to end point, flow control and ennon control is carried out in the transport layen.

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Ans to the Q No 4 (b)

Throughput is an actual measure of how much data is successfully transferred from source to destination and bandwidth is a theoretical measure of how much data could be transferred from source to destination. Throughput measures speed while bandwidth is only indirectly related to speed.

Throughput is can be greater than bandwidth.

Ans to the Q No 4(a)

$X = 2+1 = 3$

$Y = 4+1 = 5$

channel 3 MHz bandwidth

The SNR for this channel is $(10 \times 5) = 50$

Bit rate $= 2 \times 3 \times \log_2(2)$

~~$= 6 \times$~~

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Signal level =