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Course Title: Data communications

Ans to the Q.NO.1

(a)

X is $28 + 1 = 29$

Y is $2 + 1 = 3$

for mesh topology $= n(n-1)/2$ here $n = \text{node / computer number}$

$= 9(9-1)/2$

$= 72/2$

$= 36$

for star topology $= 3 + 4$

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(b)

Half-Duplex:

Advantages: Both transmit and data received possible, like a

Disadvantages: We can not data transmit or received at the same time. High data latency.

Full-Duplex:

Advantages: We can transmit and receive data at the same time. It saves time.

Disadvantages: Its cost is higher.

Ans to the Q.NO.4

②

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$$X = 8 + 1 = 9$$

$$Y = 2 + 1 = 3$$

$$\text{Bandwidth } B = 9 \text{ MHz} = 9 \times 10^3 \text{ Hz}$$

$$\text{SNR} = 10 \times 3 = 30$$

$$\text{Bit rate} = 2 * B * \log_2 L = 2 * 9 \times 10^3 \text{ Hz} \log_2 L$$

⑤

Bandwidth:

Bandwidth is the theoretical speed of data
Transferred.

Throughput

Throughput is the ~~actual out put~~ actual
2 speed of the data network