17

University of Asia Pacific

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Name : Md. Mehedi Hasan

ID : 18101021

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Ans to the question no - 01

(a)

Here, $X = 1+1 = 2$

$Y = 2+1 = 3$

For mesh topology, we know, if there are n nodes or device, there are $n(n-1)/2$ links

∴ Here links need for mesh topology, $= 2(2-1)/2$

$= 2/2 = 1$ link

For star topology, we know, if there are n nodes or devices, there need n links.

∴ Here links need for star topology = 3 links

6/

If I were to choose between two topologies for a more secure network I will prefer star topology. Because each of the nodes is independently connected to the central hub, should one go down, the rest of the network will continue functioning unaffected, making the star topology a stable and secure network. One has to ensure that the hub or central device is always working and extra security ~~feat~~ features should be added to the hub because it is the best part of the network.

Ans to the question no - 04

(a)

Here, $X = 1+1$

$Y = 2+1$

$SNR = 10 * 2 = 20$

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

$= 106 \log_2 (1 + 20)$

$= 106 \log_2 (21)$

signal level, $L = 2 \times 1\,MHz \times \log_2 L$

Ans to the question no-04

(b)

Differences between bandwidth and throughput —

Bandwidth	Throughput
(1) Data capacity of a channel which can be transferred in specific period of time.	(1) Actual measure of data transferred over a specific period of time.
(2) Physical layer of OSI model.	(2) Any layer of OSI model.
(3) Not impacted by physical obstruction.	(3) Highly impacted by external interference.
(4) There is no dependency	(4) Dependent on latency.

P.T.O

~~Throughput~~ Bandwidth is greater than ~~bandwidth~~ throughput because bandwidth provides us with a theoretical measure of the maximum number of packets that can be transferred and throughput tells us the number of packets that are actually being successfully transferred.

7