28/

Name: Wahid Tawsif (Prithu)

ID: 14101029

DEP: CSE

Course Code: ~~CSE~~ CSE 315 (self study)

Wahid Tawsif Prithu, CSE→315

14101029, Sec:A, CSE,

①

Ans: to the question no.1

We have two topologies of computers in two rooms one room has x computers connected with mesh topology and other room has y computer connected with star topology.

~~Here $\frac{x \cdot y}{x} = 1410102$~~

~~My ID = 14101029~~

~~$x = 29$~~

My ID = 14101029

$x = 9 + 1 = 10$

~~$y = 0 + 1$~~

$y = 2 + 1 = 3$

P.T.O.

x computer: A mesh Network with n nodes has $\{\frac{n(n-1)}{2}$ links

A node has $n-1$ (I/0) ports (link)

$$\frac{n(n-1)}{2} = \frac{10(10-1)}{2}$$

$$= \frac{90}{2} = 45 \text{ links}$$

y computer

y computer connected with star topology which is dedicated point to point link and a central controller so the number of cable link for star topology is

$$n = 3 \text{ Links} \qquad \text{Ans}.$$

If someone choose me more secure network between these two topologies then I will prefer mesh topology because,

– Star topology is dedicated point to point link only to a central controller called a hub hub acts as an exchang No direct traffic between devices, less expensive and robust but the whole connection is dependent on a single point.

11

But, Mesh topology is reliable and robust as failure of one link doesn't affect other links and

communication between others devices on the network. ~~Topology~~ Mesh topology is secure because there is (no) point to point link thus ~~~~ unauthorized access is not possible.

(b) Aw. : It is will communicate with my tried and I have a channel with 1000 bps bandwidth i can choose full duplex and Half duplex data flow but I will choose full duplex because ,

In Half duplex mode sender

can send the data and also
can receive data but one at a tim

In full duplex mode senden can
send data and receive data
Simultaneously. full duplex provide
betten penformance than Half
duplex.

~~~~

Advantage and disadvantage :-

Half duplex :

Advantage : Both transmit
and receive data.

Disadvantage :. But not at the
same time.

full duplex:

Advantage: Transmit and receive data simultaneously.

Disadvantage: Channel capacity must be divided between two directions.

Ans. to the question no 2.

(b) A. Like Data link layer
error controle and flow controle
are also performed in transport
layer in end to end pathen than
on single link.

In data link layer: Error control
in data link layes is the process
of detecting and correcting
data frames that have been
corrupted or lost during
transmission. Data link layer
follows a technique to detect frams

9101029

transit errors and take necessary action and flow control control the data flow in data link layer.

9. In transport layer: To ensure

reliable communication, there needs to exist flow control and error control for end point to end point flow and error controle is carried out in the transport layer.

Ans to the question no 2,

(a) Ans: My ID = 14101029

Here,

$$x = (9)^2 \bmod 6$$

$$= 81 \bmod 6.$$

$$y = (9+1) \bmod 6$$

$$= 10 \bmod 6.$$

Anw. to the question no 3

(b) Ans, the theorem established Shannon's channel capacity for such communication link a bound on the maximum amount of error free information per time unit that can be transmitted with a specified bandwidth in the presence of the noise interference, assuming that the signal signal power is bounded.

On Nyquist theorem states that a periodic signal must be sampled at more then twice the higest frequency. component of the signal. In practice beeuse of the finite time available rate somewhat highen than this is necessary A sample rate of 4 per cycle at ~~~~ Oscilloscope banwidth would be typical
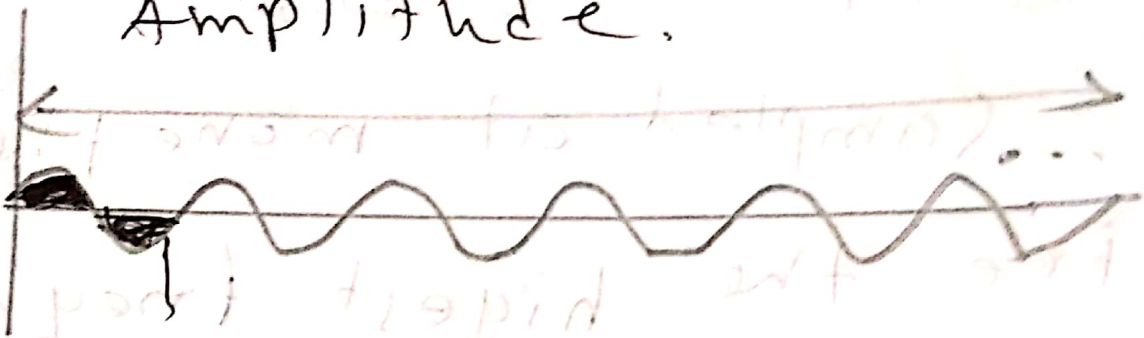
Ans to the question no

(c) Ans.

Amplitude.

(i)

Period $\frac{1}{22}$ s.

6 periods in 1 s