

- (a)
- _____ topology has unidirectional movement of traffic.
 - Set of rules that govern communication is called _____
 - _____ of a network is the frequency of failure and network recovery time after a failure is measured.
 - ASK, PSK, FSK and QAM are all examples of _____ modulation.
 - Data synchronization is a function related with _____ layer.
 - The _____ layer changes bits into electromagnetic signals.
 - The information to be communicated in a network is called the _____.
 - _____ topology requires the maximum number of I/O ports.
 - A signal that repeats itself is a _____ signal.
 - A 56k modem can download at a rate of _____ Kbps and upload at a rate of _____ Kbps.
 - In mesh topology, if there are five nodes then there will be _____ links.
 - When data is transmitted from device A to device B using internet model, the header from A's layer 4 is read by B's _____ layer.
 - A _____ device will convert an analog signal to a digital signal.
 - _____ is the collection of all the component frequencies.

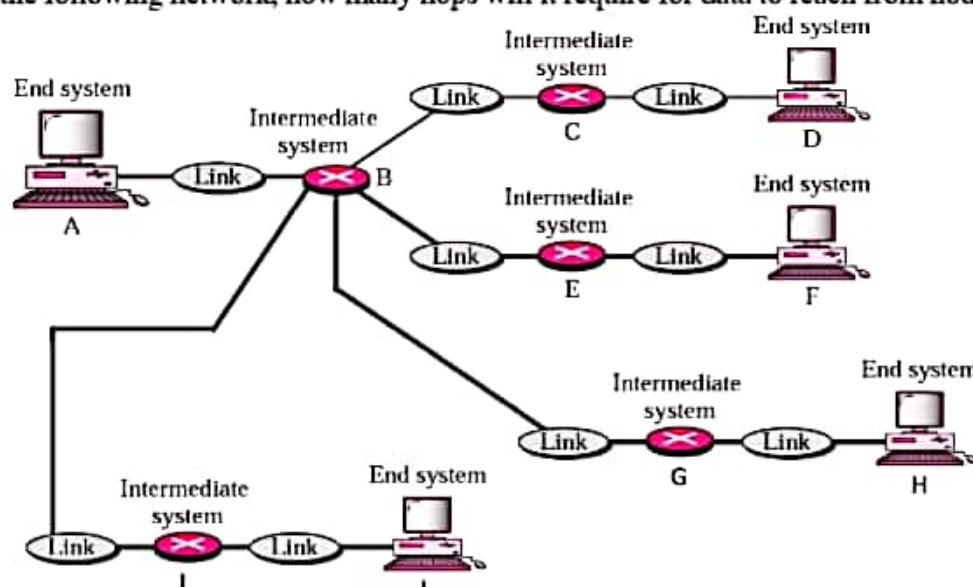
Marks 14
CLO 1

- (a)
- How are frames different from packets? Explain with examples.
 - A phone line being analog can we send digital data on phone lines? Support your answer with examples.
 - Give some details about fault tolerance, which network topologies have fault tolerance capability?
 - How is logical addressing different from physical addressing? Support your answer with examples.
 - A local telephone company wants to connect the LANs in all its offices throughout a city. For this case which network category would be used?

Marks 10
CLO 1

- (a) Consider the following network, how many hops will it require for data to reach from node A to node J.

Marks 04
CLO 1



- (b) A Sine wave has a frequency of 135 Hz. What is its period?

Marks 02
CLO 1

(1)

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Question No 1

Fill in the blanks

- (1) Ring
- (2) Protocol
- (3) Reliability
- (4) Digital
- (5) Data Link Layer
- (6) Physical Layer
- (7) Message
- (8) Mesh
- (9) Periodic
- (10) $\epsilon_1 = 6.6$ $\epsilon_2 = 33.6$
- (11) 10
- (12) Transport
- (13) ADC or Analog-Digital
- (14) Frequency Domain

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Frame :-

Frame is the serial connection of bits and it encapsulates packets

Packet :-

Packet are the fragmented form of data and its encapsulates segment data link

Example :-

Frame is the data unit.

Packet is the network layer Protocol data unit.

(a)

Yes we can because computer works on digital data. To transmit digital data the sending modem must modulate or encode a computer digital signal that will travel in telephone line.

(3)

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(3)

Fault tolerance is the property that makes a system to operate in fault conditions.

Mesh topology have fault tolerance capacity because it has multi connection.

(4)

Logical Addressing - It is a virtual address and can be viewed by users. All logical address generated by CPU by using Program.

Physical Addressing - Physical address refers to a location in the memory unit. Mapped to corresponding Physical address of Program.

Example -> Physical address is flexible and will keep changing with system but the Physical objects remains same. Where as logical addresses get formatted when the system is rebooted while no change happens to Physical address.

(4)

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(5)

In this case the telephone company will use Ring network

Question No 3
Part (a)

There will be (3) hops require for data to reach from node A to node J.

- (1) From End System A to B intermediate System.
- (2) From Intermediate system B to intermediate System I.
- (3) From intermediate system I to End system J.

Part (b)

Frequency of sine wave = 135 Hz
we know that

$$f = \frac{1}{T}$$

$$T = \frac{1}{f}$$

$$T = \frac{1}{135}$$

$$T = 0.0074 \text{ sec}$$