

**Department of Electrical Engineering**  
**Mid – Term Assignment Spring 2020**  
**Date: 13/04/2020**

**Course Details**

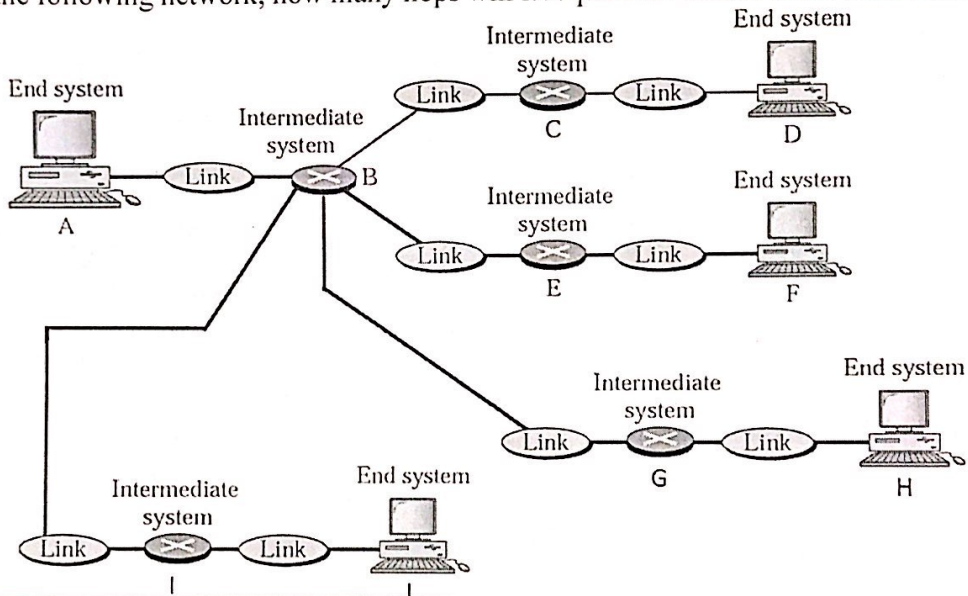
Course Title: Computer Communication Network                      Module: 06  
Instructor: \_\_\_\_\_    Total Marks: 30

**Student Details**

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Q1.	(a)	<ol style="list-style-type: none"><li>1. _____ topology has unidirectional movement of traffic.</li><li>2. Set of rules that govern communication is called _____</li><li>3. _____ of a network is the frequency of failure and network recovery time after a failure is measured.</li><li>4. ASK, PSK, FSK and QAM are all examples of _____ modulation.</li><li>5. Data synchronization is a function related with _____ layer.</li><li>6. The _____ layer changes bits into electromagnetic signals.</li><li>7. The information to be communicated in a network is called the _____.</li><li>8. _____ topology requires the maximum number of I/O ports.</li><li>9. A signal that repeats itself is a _____ signal.</li><li>10. A 56k modem can download at a rate of _____ Kbps and upload at a rate of _____ Kbps.</li><li>11. In mesh topology, if there are five nodes then there will be _____ links.</li><li>12. 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.</li><li>13. A _____ device will convert an analog signal to a digital signal.</li><li>14. _____ is the collection of all the component frequencies.</li></ol>	Marks 14
			CLO 1

Q3. (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): OSI
- 8): Mesh
- 9): Periodic
- 10): 56.6 and 33.6
- 11): 10
- 12): Transport
- 13): ADC or Analog-Digital converter
- 14): Frequency Domain

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## Question No 2

### Part (a)

1):

Frame: Frame is the serial collection of bits and it encapsulates packets.

Packet: Packets are the fragmented form of data and it encapsulates segment.

Example: ~~Frame~~ is the data link layer protocol data unit.  
Packet is the network layer protocol data unit.

2):

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

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~~ 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 object remains same. Whereas, logical addresses get formatted when the system is rebooted while no change happens to physical address.

(4)

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.

- i): From End system A to B intermediate system
- ii): From intermediate system B to intermediate system I.
- iii): From intermediate system I to ~~intermediate~~ system J.  
End

Part (b)

frequency of sine wave = 135 Hz

we know that

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

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

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

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