

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

**Course Details**

<b>Course Title:</b>	<u>Computer Communication Network</u>	<b>Module:</b>	<u>06</u>
<b>Instructor:</b>	<u>Engr:Waqas</u>	<b>Total Marks:</b>	<u>30</u>

**Student Details**

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Q 1.	(a )	1. _____ topology has unidirectional movement of traffic.	Mar ks 14  CLO 1
		2. Set of rules that govern communication is called _____	
		3. _____ of a network is the frequency of failure and network recovery time after a failure is measured.	
		4. ASK, PSK, FSK and QAM are all examples of _____ modulation.	
		5. Data synchronization is a function related with _____ layer.	
		6. The _____ layer changes bits into electromagnetic signals.	
		7. The information to be communicated in a network is _____	



		<p>called the _____.</p> <p>8. _____ topology requires the maximum number of I/O ports.</p> <p>9. A signal that repeats itself is a _____ signal.</p> <p>10. A 56k modem can download at a rate of _____ Kbps and upload at a rate of _____ Kbps.</p> <p>11. In mesh topology, if there are five nodes then there will be _____ links.</p> <p>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.</p> <p>13. A _____ device will convert an analog signal to a digital signal.</p> <p>14. _____ is the collection of all the component frequencies.</p>	
Q 2.	(a )	<p>1. How are frames different from packets? Explain with examples.</p> <p>2. A phone line being analog can we send digital data on phone lines? Support your answer with examples.</p> <p>3. Give some details about fault tolerance, which network topologies have fault tolerance capability?</p> <p>4. How is logical addressing different from physical addressing? Support your answer with examples.</p> <p>5. 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?</p>	<p>Marks 10</p> <p>CLO 1</p>
Q 3.	(a )	<p>Consider the following network, how many hops will it require for data to reach from node A to node J.</p>	<p>Marks 04</p> <p>CLO 1</p>



CCN Mid Term

Q1(a):- MCQ'S :-2

① Ring

② Protocol

③ Reliability

④ Digital

⑤ Physical layer

⑥ Physical

⑦ Signal

⑧ Mesh Toplogy

⑨ Periodic Signal

⑩ 56:6, 33:6

⑪ 10

⑫ Transport layer

⑬ ADC (Analogue to Digital Converter)

⑭ Frequency Spectrom

Q2(a) → How are frames different from packets, Explain with example?

Ans. → frame is the serial collection of bits, and it encapsulates packets whereas packets are the fragmented form of data and it encapsulate segment.

Example. Frame is the data link layer and packets is the network layer protocol data unit.

The source of destination is MAC address and IP address for packet.

Q2 (a) A phone line being analogue can we send digital data on phone lines? Support your answer with example.

Ans. Yes,  
i.e. Computer works on digital data (0,1)  
To transmit digital data the sending modem must modulate first or encode a computer digital signal to analogue signal that will travel in telephone line



Q<sup>2</sup> (3):- Give some detail about fault tolerance which network topology have fault tolerance capacity?

Ans: It is the property that makes a system to operate properly in fault conditions (Not complete failure)

→ Mesh topology has multiconnections which makes it the most fault tolerance topology.

Q<sup>2</sup> (4):- How is logical addressing differ from physical addressing.

Logical Addressing

physical Addressing

It is a virtual address and can be viewed by user's.

All logical address generated by CPU By using programme

Physical address refers to a location in the memory unit.

mapped to corresponding physical address of program

Example: Ali Raza Khan 12647 (4)  
Logical address is flexible and will keep changing with system but the physical object always remain constant. whereas logical addresses get formatted when the system is rebooted while no change happens to physical address.

Q2 (5) A logical telephone company wants to connect LAN's in all its offices throughout the city for this case which network category would be used?

Ans: Ring Network category would be used

Q3 (a) How many hops are required from Node A to node J in given Network?

Ans: 3 hops will required from node A to node J.

(1) End System ~~A~~ A to B router.

(2) From router B to router I

(3) From router I to J



Q3(b)

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Data:

Sin wave

$$f = 135 \text{ Hz}$$

$$T = ?$$

Sol  
#

As we know  
Reciprocal of  $T$  is frequency

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

So

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

$$T = \frac{1}{135 \text{ Hz}} = 0.0074 \text{ second}$$

$$T = 7.4 \text{ mSec}$$