

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

**Course Details**

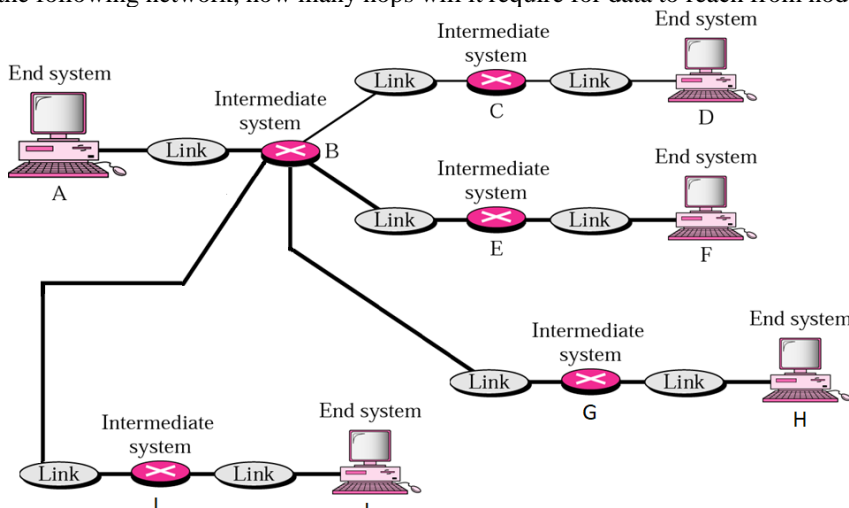
**Course Title:** Computer Communication Network  
**Instructor:** Engr Muhammad Waqas

**Module:** 06  
**Total Marks:** 30

**Student Details**

**Name:** Anees Sheer

**Student ID:** 11743

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>	<p>Marks 14 CLO 1</p>
Q2.	(a)	<ol style="list-style-type: none"> <li>1. How are frames different from packets? Explain with examples.</li> <li>2. A phone line being analog can we send digital data on phone lines? Support your answer with examples.</li> <li>3. Give some details about fault tolerance, which network topologies have fault tolerance capability?</li> <li>4. How is logical addressing different from physical addressing? Support your answer with examples.</li> <li>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?</li> </ol>	<p>Marks 10 CLO 1</p>
Q3.	(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 CLO 1</p>
	(b)	<p>A Sine wave has a frequency of 135 Hz. What is its period?</p>	<p>Marks 02</p>

			CLO 1
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Q1 Fill in The blank:

- ① Ring
- ② Protocol.
- ③ Reliability
- ④ digital to analog
- ⑤ Data Link.
- ⑥ Physical
- ⑦ OSI
  
- ⑧ Mesh
- ⑨ Mysterious
  
- ⑩ 56.6, 33.6
- ⑪ 20 links
- ⑫ Transport.
- ⑬ Rectifier
  
- ⑭ Frequency

(2)

Q.1) How are frames different from packets? Explain with example?

Ans The difference between frame & packets is that frame is the serial collection of bits & it encapsulates whereas packets are the fragmented form of data & it encapsulates segment. Data link layer performs framing process.

Q.2) A phone line being analog can we send digital data on phone lines? Support your answer with example.

Ans Computers transmit digital data expressed as electrical impulses, whereas phones transmit voice frequencies as analog signals. To transmit digital data, the sending modem must first modulate, or encode, a computer's digital signal into an analog signal that can travel over the phone line.

Example: Digital Telephony sending high-speed data over phone lines. New communication systems are overwhelmingly digital, analog is slowly on its way out. Therefore local telephone companies may offer some or all of these digital services you can recommend to your customers.

Q.3) Give some detail about fault tolerance, which network topology have fault tolerance capability?

Ans Fault tolerance is the property that enables a system to continue operating properly in the event of the failure (one or more faults within) some of its component. Mesh topology have

(7)

multiconnections, making it the most fault tolerant topology available. Every component of the network is connected directly to every other component.

(4) How is Logical addressing different from Physical addressing? Support your answer with examples.

Ans

Logical

→ It is the virtual address generated by CPU.

→ Set of all logical addresses generated by CPU in reference to a program is referred as Logical.

→ The user can view the logical address of a program.

Physical

The location in a memory unit.

Mapped to the corresponding logical addresses is as physical addresses.

The user can ~~view~~ never view physical address of program.

(5) A local telephone company wants to connect the LAN's in all its offices through a city. For this case which network category would be used?

Ans

Local telephone company wants to connect the LAN's in all its offices in the city. For this case the Ring network category would be used.



Q3 as Consider the following network, how many hops will it require for data to reach from node A to node j.

Ans In this network 3 hops will be required for data to reach from A to j.

- 1 From End-system A to router B.
- 2 From router B to router 1.
- 3 From router 1 to end system to router j.

Q A sine wave has a frequency of 135 Hz. What is its period?

Ans The frequency of 135 Hz of sine wave is.

$$t = \frac{1}{135} = 0.0074$$

The time period is 0.0074

