

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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Student ID: 12595

Q1.	(a)	<ol style="list-style-type: none"> 1. _____ topology has unidirectional movement of traffic. 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 called the _____. 8. _____ topology requires the maximum number of I/O ports. 9. A signal that repeats itself is a _____ signal. 10. A 56k modem can download at a rate of _____ Kbps and upload at a rate of _____ Kbps. 11. In mesh topology, if there are five nodes then there will be _____ links. 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. 13. A _____ device will convert an analog signal to a digital signal. 14. _____ is the collection of all the component frequencies. 	<p>Marks 14</p> <p>CLO 1</p>
Q2.	(a)	<ol style="list-style-type: none"> 1. How are frames different from packets? Explain with examples. 2. A phone line being analog can we send digital data on phone lines? Support your answer with examples. 3. Give some details about fault tolerance, which network topologies have fault tolerance capability? 4. How is logical addressing different from physical addressing? Support your answer with examples. 5. 	<p>Marks 10</p> <p>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> <pre> graph LR A[End system A] --- B[Intermediate system B] B --- C[Intermediate system C] C --- D[End system D] B --- E[Intermediate system E] E --- F[End system F] B --- G[Intermediate system G] G --- H[End system H] </pre>	<p>Marks 04</p> <p>CLO 1</p>
	(b)	<p>A Sine wave has a frequency of 135 Hz. What is its period?</p>	<p>Marks 02</p> <p>CLO 1</p>

Spring 2020

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Computer Communication Network

Name - Syed. M. Zahoor

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- ① Ring
- ② Protocol
- ③ Reliability
- ④ Digital
- ⑤ Physical layer
- ⑥ physical
- ⑦ Signal
- ⑧ Mesh Topology
- ⑨ Periodic Signal
- ⑩ 56.6, 33.6
- ⑪ 20
- ⑫ Transport layer
- ⑬ ADC (Analogue to Digital Converter)
- ⑭ frequency spectrum.

(2)

(2)
(1)

How are frames different from packets?
Explain with examples:-

Ans

A frame can be defined as a data unit in Data link layer. on the other hand, a packet is the protocol data unit used in the network layer.

The main difference b/w frame and packets is that the frame is a serial collection of bits and frames are units of data in the link ~~and~~ layer and it performs framing process.

Packet encapsulates segment in the network layer on the contrary, frames encapsulates packets in the data link layer.

Example

Frames includes the source and destination MAC addresses (i.e. the physical address of the ~~main~~ machine).

In contrast, packetisation includes the source and destination IP addresses.

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

Examples

Ans 2 yes we can send digital data on phone lines because phone lines always carry digital data by converting analog data into digital data through medium.

③ Given some details about fault tolerance, which network topologies have fault tolerance capability?

Ans fault tolerance is property that enables a system to continue operating properly in ~~properly~~ the event of the failure of some of its components. If the operating quality decrease is proportional to the severity of the failure as compare to rarely designed system in which even a small failure can cause total breakdown. A Mesh topology has multiple connections making it most fault tolerant topology.

(4)

Q4

Ans Logical address is generated by CPU while a program is running. The logical address is virtual address is ~~not~~ it does not exist physically. This address is used as reference to access the physical memory location by CPU. Physical Address identifies ~~location~~ a physical location of required in a memory. The user never directly deals with the physical address but can access by its corresponding logical address.

Q5 A ~~consider~~ Local telephone company want to connect the LANs in all its offices throughout a city. For this case which network category would be used?

Ans - In this case we use WAN (wide Area network) is another important network that which is spread across a large geographical area. WAN network system could be a connection of a ~~to~~ LAN which connects with other LANs using telephone lines and radio waves. it is mostly limited to an enterprise or an organization.

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Q5

① Consider The following network, how many hops will it require for data to reach from node A to node J.

Ans There are Three hop will require for data to reach from A to J node.

② A Sine wave has a frequency of 135 Hz what is its period?

Ans

Given Data:

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

$$T = ?$$

So we know that
formula period

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

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

$$T = 7.40 \text{ ms}$$