

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

Course Details

Course Title: Computer Communication Network
Instructor: _____

Module: 06
Total Marks: 30

Student Details

Name: owais afridi

Student ID: 13686

- Q1. (a)
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.

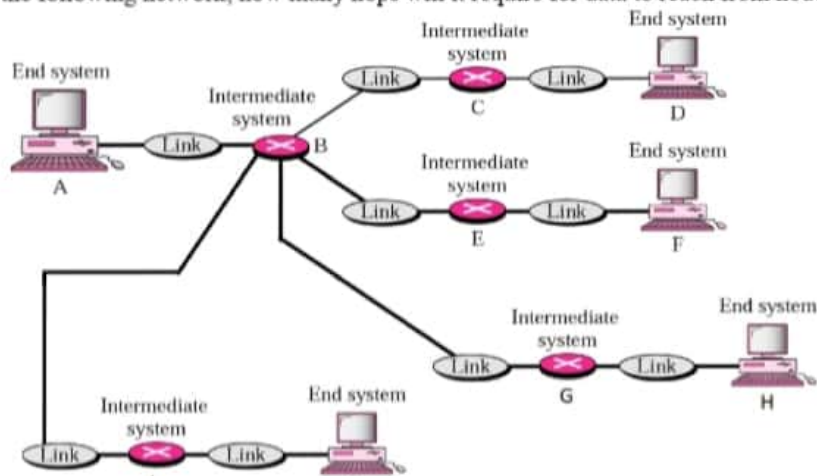
Marks 14
CLO 1

- Q2. (a)
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. 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

- 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

Question #01

Fill the blanks

Answer:

1. Ring Topology

2. Protocol

3. Reliability

4. Digital

5. Session layer or physical

6. physical

7. Message

8. Mesh Topology

9. Periodic Signal

10. 56.6, 33.6

11. 10

12. Transpot

13. ADC (Analog to Digital Converter)

14. Frequency Spectrum.

Question #2:

1- How are frames different from packets? Explain with examples.

Answer:

Basis For Comparison	Frame	Packet
Basic	Frame is the data link layer protocol data unit.	Packet is the network layer protocol data unit.
Associated OSI layer	Data link layer	Network layer
Includes	Source and destination MAC address.	Source and destination IP address.
Correlation	Segment is encapsulated within a packet	Packet is encapsulated within a frame

Example on ext next page:

Example:

An enormous file is broken into many packets and then transmitted across the network one at a time. The network hardware

Q#2

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

Answer:

Telephones 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. Because computers transmit data in digital data, express electrical impulses.

Example:

Digital telephones 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.

Question # 02

part (3) Give some details about fault tolerance, which network topologies have fault tolerance capability?

Ans: Mesh topology Network

Mesh network topology is most fault tolerant and has most redundancy. In a mesh topology, all devices are connected directly to every other device on the network. If one link fails, there is always another available.

Q#2

(4): How is logical addressing different from physical addressing? Support your answer with example.

Ans:

Basis For Comparison	Logical Address	Physical Address
Basic	It is the virtual address generated by CPU	The physical address location in a memory unit.
Address space	Set of all logical addresses generated by CPU in reference to a program is referred as logical address space.	Set of all physical addresses mapped to the corresponding logical addresses is referred as physical address.
Visibility	The user can view the logical address of a program	The user can never view physical address of program.
Access	The user uses the logical address to access the physical address	The user can not directly access physical address.

Q# 02

(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?

Answer: A local telephone Company wants to connect the LANs in all its offices throughout in the city, for this case Ring topology Network Category would be used.

Because a ring topology is a Network Configuration in which all devices connection create a circular data path. Each networked device is connected to two others. Like point on a circle. Together, devices in a ring topology are referred to as a ring network.

Question # 03

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

Answers:

There are three hops required for data reaches from node A to node J.

Question # 03

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

Given:

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

Required:

$$\text{Time period} = T = ?$$

$$\begin{aligned} \text{Sol: } T &= 1/F \\ &= 1/135 \end{aligned}$$

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