

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)
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.

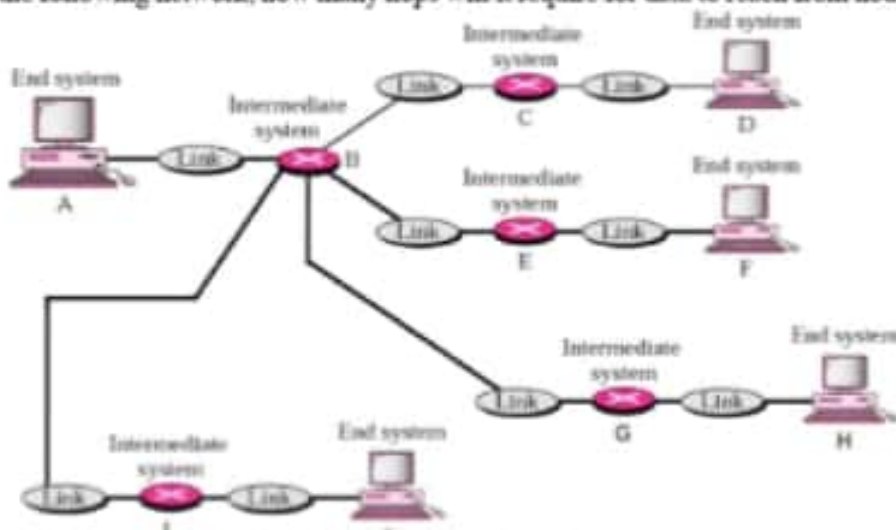
Marks 14
CLO 1

- 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

Q1: Answers of given fill in the blanks.

- ① Ring
- ② Protocol
- ③ Reliability
- ④ Digital
- ⑤ Physical layer
- ⑥ Physical
- ⑦ Message
- ⑧ Mesh
- ⑨ Periodic
- ⑩ $56.6 \rightarrow 33.6$
- ⑪ 10 links
- ⑫ Transport layer
- ⑬ ADC (Analog to digital converter)
- ⑭ Frequency spectrum.

Q ③ Following are answers of 2 parts.
① We have 3 hops to go from A to J.

② Frequency = $f = 135 \text{ Hz}$
Period = $T = ?$

\Rightarrow solⁿ: $T = \frac{1}{f} = \frac{1}{135}$
 $= 7.4 \text{ ms}$

Q = 2①

Frame

Packet

⇒ Data Link layer Network layer header

⇒ ~~Data Link~~ Data Link layer Trailer Network layer trailer

⇒ Similarity in these two is they are composed of upper layer data which lies in both.

⇒ ④

Logical Address:

It is generated by CPU. It is a virtual address. Logical address is used by CPU as reference to get access to physical memory location.

Physical Address:

It identifies physical location of data in a memory. It is not used directly instead need reference of logical address.

② A computer transmit digital data in term of electrical impulses and phone transmit in term of voice frequency analog signal. To transmit digital data the sender modem must be modulate to analog data for transmission via phone -

There is limit to the amount of information a common analog telephone line can hold. Which is 56 Kbps.

Example ::

Digital telephone send high speed over phone lines. New communication system are overwidely digital, analog is slow on its way out - Therefore local telephone companies may offer some digital series you can recommend to your customer.

(5) They will use bus topology. Because it is easy to set up and extend bus network. Cable length is the least as compared to other network.

It is also cheap in term of cost.