Paper IV

Group A:Communication and Computer Networks

Broad Questions:-

1. a) Name the different layers of ISO model and explain briefly.

   b) With respect to a 10 base T network state the (i) transmission medium (ii) topology and (iii) medium segment.

   c) What do you mean by Gateway?

2. a) State the advantages of computer networking.

   b) Distinguish between centralized and distributed computing.

3. Write short notes on the followings:

   (a) E-mail.
   (b) Layered architecture.
   (c) Difference between LAN and WAN.
   (d) Layers of OSI model in Computer Network.
   (e) Network protocols.
   (f) Distributed computing.
   (g) Network Interfacing Card.
   (h) Layered protocol for Computer Network.
   (i) LAN vs. WAN.

4. What is a computer network? How it is different from a distributed system? What is the role of MODEM in data communication? Explain the following:
   (i) DNS (ii) MAN & (iii) ROUTER.

5. a) What are the essential components to establish a network among computers? Briefly explain their functions.
   b) What are LAN, MAN and WAN? How many standard alternative forms are available for LAN? Explain their characteristic features.
   c) Explain the following terms:
   i) E-mail ii) IP-address

6. a) What are the advantages and disadvantages of layered protocol suit in computer network?

   b) Compare and contrast the connectionless and connection oriented communication.

   c) What is an IP address? How is it related to physical address? How IP address identify the class of network?

7. a) What are the transmission impairments? How are they resulted in the media?

b) Which guided media is preferred most and why? Describe its structure and transmission characteristics.

c) Compare Radiowave and Microwave with respect to their characteristics. **5+5+6**

8. a) Defined loosely- coupled and tightly coupled processors. In which category does distributed system belong to?

b) Define computer network and distributed system. To which system, is client server model related? Give example of client-server system.

c) Describe functions of different layers OSI model. Show he correspondence of layers in osi and TCP/IP model. **4+4+7+1**

9. a) How is periodic function represented in time domain and frequency domain? Find out the amplitude of different frequency components and the constant terms in frequency domain.

b) Compare FDM and TDM. What is the need for guard-band? How can 4000 Hz voice grade channels be multiplexed into 60 KHz band using guard bands.

c) How FDM can be applied to fiber optics channels?

d) What is Delta modulation? Where is it used? **4+4+1+1+4+2**

10. a) What do you mean by error correcting and detecting codes?

b) Why error detection followed by retransmission is preferred?

c) Which code is used for error detection? Describe the procedure.

d) Analyze what kinds of errors will be detected by this method?

e) Give the international standard polynomials used for this method. In which cases are they used? **2+2+6+4+2**

11. Write short notes on the followings: **16**

a) Domain Name system.

b) Internet Service Providers.

c) ISDN.

d) Voice and Video conferencing.

e) Email.

f) Browsers.

Short Questions:-

1. What do you mean by logical and physical address space?
2. What is token ring?
3. What is value added network?
4. What are the band-widths of co-axial cables and optical-fibers?
5. Explain what is meant by 5 and 10 base 2 networks
6. What is full–duplex?
7. What are the bandwidths of co-axial cables and twisted pair cables?
8. What is bit stuffing? State its advantage.
9. Name different topologies used in LAN &WAN.
10. State the relation between data rate & bandwidth.
11. Distinguish between modem & codec.
12. What is S/N ratio? How is it related with maximum data rate of a noisy channel?
13. Name the layers and protocols used in Internet.
14. What are specified by different parts of e-mail address? What is this addressing called?