**Data Communication and Networking Question Bank**

**Second Year Information Technology**

**CHAPTER 1**

1. Define Data Communication. List its fundamental Characteristics.
2. List and explain three types of transmission modes. OR List and describe various Communication Modes.
3. Describe Serial transmission. Give its advantage and disadvantages.
4. Define Protocols. Why it is needed?
5. Define Standards. List various Standard Organizations.
6. Describe the application of IEEE Standards.
7. Define the following terms:
   1. Baud rate
   2. Data Transmission Rate
   3. Bandwidth
   4. Bits per rate
8. Compare Analog signal and Digital Signal (4 Points)

**CHAPTER 2**

1. Describe Time Division Multiplexing with neat diagram and advantages and disadvantages.
2. Compare TDM and FDM (Any Four Points).
3. Describe Frequency Division Multiplexing with neat diagram and advantages and disadvantages.
4. What is Multiplexing? Give its Type.

**CHAPTER 3**

1. Define error? List and describe types of error.
2. Explain types of Impairments.
3. Describe CRC with suitable example.
4. Explain the terms a) VRC b)LRC
5. What is the difference between even parity and odd parity?

**CHAPTER 4**

1. State fiber optic cable losses, advantages and disadvantages.
2. Compare Guided Media and Unguided media (any four points).
3. Describe Satellite communication with neat diagram. Give its limitation
4. Describe types of wireless media.
5. Draw construction of Fiber optic cable. Describe its construction in brief.
6. Give the classification of transmission media.
7. Compare twisted pair cable, co-axial cable and Optical fiber cable.

**CHAPTER 5**

1. Describe following
   1. Wi-Fi
   2. Wi-Max
2. Explain the architecture of BSS and ESS. OR Describe the architecture of IEEE 802.11 with diagram. OR Draw the architecture of Bluetooth and explain. OR Compare Piconet and Scatternet.
3. Sketch the architecture of Bluetooth and state the function of each layer. OR Sketch the Bluetooth layer with appropriate layer.
4. Explain Hands off operation in Mobile telephone.
5. Distinguish between Ethernet and Wireless LAN.

**CHAPTER 6**

1. Describe the concept of Circuit Switching. OR Describe the phases of circuit Switching. OR Draw neat diagram for Circuit switching. Explain in brief
2. Explain Packet Switching for Datagram Approach.
3. Explain Packet Switching for Virtual Circuit.
4. Compare Packet Switching approaches Datagram Approach and Virtual Circuit.
5. Compare Packet, Message and Circuit Switching.
6. What is Topology? List various topologies.
7. What is hybrid Topology? Give its advantage over other topology.
8. Explain any four advantages and disadvantages of each type of topology.

**CHAPTER 7**

1. Draw OSI Reference Model. Describe working of any two layers.
2. List the names of protocols for following layers:
   1. Application
   2. Transport
   3. Presentation
   4. Session
   5. Network
   6. Data Link
   7. Physical
3. Define the following terms:
   1. Protocol
   2. Peer
   3. Protocol data Unit [PDU]
   4. Packet
   5. Frames
   6. Datagram
   7. Fragments
4. Compare connection oriented and connection less communication.

**CHAPTER 8**

1. Explain DQDB (Distributed Queue Dual Bus)?
2. What is SMDS?
3. Compare Fast Ethernet and Gigabit Ethernet.
4. Describe working of Token Ring. Give its advantages and disadvantages over conventional Ring Topology.
5. Draw and explain WAN Architecture.
6. What is WAN Addressing? Give its use.
7. What is Virtual LAN? Describe with neat diagram.
8. What is VPN? Describe it.
9. What is WAN? How it is differ from LAN.

**CHAPTER 9**

1. What is internetworking? What are the problems associated with it.
2. Describe following
   1. Routers
   2. Gateways
   3. Switch
   4. HUB
3. What are switches? How it is better than Hub.
4. What are the ways to access the internet? Describe any one.
5. What is Peer-to-Peer Process?
6. What is repeater? Give its use.
7. Draw Architecture of ISP.
8. Describe Internet topology.

**CHAPTER 10**

1. Describe Dial Up network with its specifications.
2. Describe Cable Modem with neat diagram.
3. Describe Leased Line connection. Give its needs.

**CHAPTER 11**

1. What is IP Address? Why it is require?
2. Define IP address? Describe the classes of IP address.
3. Compare TCP/IP and OSI (four points).
4. What is Persistent TCP Connection? Give its importance.

**CHAPTER 12**

1. What is UDP? Give structure of UDP Packet.
2. Compare TCP and UDP (8 points).

**CHAPTER 13**

1. Describe working of ARP and RARP. OR Describe RARP with its application.
2. What is DNS server? Describe Concept of DNS.
3. Describe FTP and TFTP.
4. Describe any two types of protocol.