Unit 1

1. What are the differences between half duplex and full duplex transmission mode?
2. Name the four basic network topologies, and cite the advantage of each type
3. List and explain the five component of Data Communications system.
4. What are different responsibilities of transport layer?
5. Write a short note on Addressing.
6. The period of a signal is 100 ms. what is its frequency in kilohertz?
7. Discuss the task performed by physical layer, in detail.
8. The period of a signal is 100ms , what is its frequency in kilohertz?
9. Discuss in detail TCP/IP protocol suite with neat labelled diagram
10. Explain FDM process with neat labelled diagram.
11. Write a short note on FHSS.
12. If a periodic signal is decomposed into five sine waves with frequencies Of 110, 310,510, 710, 910 and 1100 Hz, what is its bandwidth? Draw the spectrum, assummg all components have a maximum amplitude Of IO V.

Unit 2

1. What are the differences between parallel and serial transmission?
2. Which multiplexing technique is used for fiber optic link? Explain the reason-
3. Name the advantages of optical fiber over twisted-pair and coaxial cable.
4. Describe the need for switching and define a switch
5. How does a single bit error differ from a burst error?
6. Discuss the concept of redundancy in error detection and correction.
7. Differentiate between analog signals and digital signals
8. Represent the following digital data in the form of digital signals using the given scheme, assummg that the last signal level has been positive-
9. 00110010-NRZ
10. 10110101- psudoternary
11. Discuss the physical characteristics of twisted pair cable with neat labelled diagram. List connectors of twisted pair cable.
12. Write a short note on Direct Sequence Spread Spectrum.
13. List types of analog-to-analog conversion techniques- Explain Amplitude modulation in detail.
14. How address resolution protocol works? Discuss ARP Request and ARP response.

Unit 3

1. Write a short note on Process to Process delivery.
2. Discuss the disadvantages of Classful addressing.
3. Explain the working of CDMA
4. What are the differences between random and controlled access?
5. Explain the terms: i) HUB ii)Routers.
6. Write a short note on Services of TCP.
7. Discuss CSMA. Give the flow diagram for CSMA/CD.
8. What are connecting devices? Explain the working Of Router.
9. Discuss the Distance Vector Routing algorithm with an example
10. What do you mean by socket address? Discuss the process of encapsulation and decapsulation-
11. How connectionless and connection-oriented protocol works?
12. Rewrite the following IP addresses using binary notation and find class of it
13. 192.168234
14. 245.132.45.123

Mix

1. Name and explain ant three types of transmission impairments.
2. Compare and contrast a circuit switched network and Packet switched network-
3. Write a short note on "Connectionless versus Connection-Oriented Service"
4. If a periodic signal is decomposed into five sine waves with frequencies 100, 300, 500, 700 and 900 Hz, what is its bandwidth? Draw the spectrum, assuming all components have maximum amplitude of 10 V.
5. Write a short note on Pulse Code Modulation (PCM).
6. What are five components of a data commumcations system.
7. List and explain five line coding schemes.
8. Define controlled access. List and explain three protocols in this category.
9. What are different categories of network? Explain any two in details.
10. What is a mask in IPv4 addressing? What is a default mask in IPv4 addressing?