

Q. 2 Attempt the following (Any THREE)(Each of 5Marks) (15M)

- What are the differences between half duplex and full duplex transmission mode?
- Name the four basic network topologies, and cite the advantage of each type.
- List and explain the five component of Data Communications system.
- What are different responsibilities of transport layer?
- Write a short note on Addressing.
- The period of a signal is 100 ms. what is its frequency in kilohertz?

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- What are the differences between parallel and serial transmission?
- Which multiplexing technique is used for fiber optic link? Explain the reason.
- Name the advantages of optical fiber over twisted-pair and coaxial cable.
- Describe the need for switching and define a switch.
- How does a single bit error differ from a burst error?
- Discuss the concept of redundancy in error detection and correction.

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) (15)

- Write a short note on Process to Process delivery.
- Discuss the disadvantages of Classful addressing.
- Explain the working of CDMA.
- What are the differences between random and controlled access?
- Explain the terms: i) HUB ii) Routers.
- Write a short note on Services of TCP.

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) (15)

- Name and explain any three types of transmission impairments.
- Compare and contrast a circuit switched network and Packet switched network.
- Write a short note on "Connectionless versus Connection-Oriented Service".
- 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.
- Write a short note on Pulse Code Modulation (PCM).