

- N.B.**
1. All questions are compulsory.
  2. Make suitable assumptions wherever necessary and state the assumptions made.
  3. Answer to the same questions must be written together.
  4. Numbers to the right indicate marks.
  5. Draw neat labelled diagram wherever necessary.
  6. Use of Non-Programmable calculators is allowed.

- Q. 1** Attempt any four of the following 16
- a What are the differences between half duplex and full duplex transmission mode?
  - b Name the four basic network topologies. And explain it.
  - c List and explain the five components of Data communication system
  - d Write a short note on data and signals.
  - e Explain any three types of transmission impairments.
  - f Explain wide area Network(WAN)
  - g Explain layered architecture.
  - h Write short note on Addressing
- Q. 2** Attempt any four of the following 16
- a List and explain line coding scheme.
  - b Explain FDM process with neat labelled diagram.
  - c What are the difference between Parallel and serial transmission
  - d Write a short note on twisted pair cable
  - e Explain packet switching.
  - f Write a short note on link layer addressing.
  - g Write short note on address resolution protocol
  - h Explain circuit switch network.
- Q. 3** Attempt any four of the following 16
- a Explain the terms: I) Hubs II) Routers
  - b Explain the working of CDMA.
  - c Write a short note on CSMA
  - d Explain Controlled access
  - e Write a short note on address space in IPV4 addresses
  - f Write a short note on network layer services.
  - g Explain distance vector routing algorithm in detail..
  - h Explain segment in Transmission Control Protocol.
- Q. 4** Attempt any Three of the following 12
- a Explain data rate limits.
  - b Explain Error Detection and Correction.
  - c Explain TCP features in Transmission Control Protocol.
  - d Differentiate between analog signals and digital signals.
  - e Explain node and links and services of data link layer.
  - f Write a short note on User datagram protocol

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