



[TIME-3 hrs.]

[Total Marks :80]

**N.B: Question No.1 is Compulsory.**  
**Attempt any three question out of remaining questions.**  
**Make Suitable assumption whenever necessary.**

- Q.1 Any -5 4x5
- a) What are the design issues for the OSI layers?
  - b) Differentiate between connection oriented and connectionless Service?
  - c) List the advantages of fiber optics as a communication Medium.
  - d) Explain with examples the classification of IPv4 addresses.
  - e) Explain in short different framing methods.
  - f) Explain the need of subnet mask in subnetting.
- Q.2 a) What is topology? Explain the types of topologies with diagram, advantages and disadvantages. 10
- b) What is IPv4 protocol? Explain the IPv4 header format with diagram. 10
- Q.3 a) Explain CSMA Protocols. Explain how collision are handled in CSMA/CD. 10
- b) What is Traffic shaping? Explain leaky bucket algorithm and compare it with token backed algorithm. 10
- Q.4 a) What is ICMP Protocol? Explain the ICMP header format with diagram. 10
- b) Write a program for client server application using Socket Programming(UDP) 10
- Q.5 a) Explain the use of TCP timers in detail. 10
- b) Compare Open Loop congestion control and Closed Loop congestion control. 10
- Q.6 Write a short note on the following (Any Two) 20
- A. Intemetworking Devices
  - B. Distance Vector Routing
  - C. ARP/RARP
  - D. SMTP

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