

[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
