

Time: 3 Hours

MARKS: 80

- NOTE: 1. Question no. 1 is compulsory.  
2. Attempt any 3 questions out of 5 questions.  
3. Each question carries 20 marks.

- Q.1 Attempt any four questions out of five questions **20**
- a Compare connection oriented and connectionless communication.
  - b Explain ICMP protocol.
  - c Compare RIP and OSPF
  - d Compare IPv4 and IPv6
  - e Draw and explain UDP Header.
- Q.2A Explain connection establishment, data transfer and connection termination in TCP three-way handshaking. **10**
- Q.2 B Explain Go back N and Selective Repeat technique of sliding window ARQ. **10**
- Q.3 A Suppose the network with IP address 192.16.0.0 is divided into two subnets. Find i) Number of host per subnet, ii) First address, iii) Last address **5**
- Q.3 B Compare Pure ALOHA and Slotted ALOHA. **5**
- Q.3 C Explain CSMA mechanisms. Compare CSMA/CD and CSMA/CA protocols. **10**
- Q.4 A Draw IP datagram header and explain each field. **10**
- Q.4 B Explain DHCP protocol in details **10**
- Q.5 A Classify and explain different transmission media **10**
- Q.5 B Explain HDLC frame format and its response modes. Explain bit stuffing and destuffing with example. **10**
- Q.6 Write a short note on any four of the following: **20**
1. HTTP
  2. BGP routing protocol
  3. Flow control in transport layer
  4. IPv4 to IPv6 transition
  5. Fragmentation and Reassembly