

Time: 3 Hours

Marks: 80

Note before:

- 1) Question no. 1 is compulsory
- 2) Attempt any three from the remaining questions
- 3) Assume suitable data wherever necessary

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| Q.1. | Answer any FOUR: | 20 |
| | <ol style="list-style-type: none"> a) Explain various LAN topologies with neat diagram. b) What is meant by the terms bit stuffing and byte stuffing? c) Write a note on Bellman Ford Algorithm. d) Explain ALOHA and slotted ALOHA. e) An ISP is granted a block of addresses starting with 120.60.4.0/22. The ISP wants to distribute this block to 95 organizations with 8 addresses each. Design sub blocks and give the slash notations for each sub block. Find how many addresses are still available after these allocations. f) Compare connection oriented and connection less services with examples | |
| Q.2.a. | Write a note on sliding window protocol. | 10 |
| b. | Explain the function of MAC and LLC sub layers. | 10 |
| Q.3.a. | Draw and explain IPv4 header. Compare IPv4 and IPv6. | 10 |
| b. | Write a short note on ICMP. | 10 |
| Q.4.a. | Describe three way handshake in TCP. Why do we have it only in TCP and not in UDP. | 10 |
| b. | Explain how TCP handles error control and flow control? | 10 |
| Q.5.a. | State and explain various types of frames in HDLC. | 10 |
| b. | Explain OSI and TCP/IP and explain the function of each layer. | 10 |
| Q.6. | Write short note on (any two): | 20 |
| | <ol style="list-style-type: none"> a) Berkley API b) CSMA/CD and CSMA/CA c) Domain Name Server | |