

Time: 3 hours

Max. Marks: 80

- N.B. : (1) Question No.1 is compulsory
(2) Write any three questions from Q. 2 to Q.6.
(3) Draw neat diagrams wherever necessary.

Q1 Solve any four

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| a | Explain various LAN topologies with neat diagram. | 5 |
| b | Compare packet switching and circuit switching network. | 5 |
| c | Compare flow control and error control. | 5 |
| d | Explain advantages of link state routing protocol over distance vector routing protocol. | 5 |
| e | Explain any 5 tcp-ip commands use in computer network. | 5 |
| f | Write one example for IPv4 address, IPv6 address, MAC address, data link layer protocol and transport layer protocol. | 5 |
| Q2 | | |
| a | Draw TCP-IP protocol model. Explain the function of each layer. | 10 |
| b | Explain classfull routing protocol, justify, why subnetting is required in IPv4 addressing. | 10 |
| Q3 | | |
| a | Draw CSMA/CA flow diagram. Explain it in detail. | 10 |
| b | Compare IPv4 and IPv6. | 10 |
| Q4 | | |
| a | Explain TCP three way handshaking during connection establishment and connection release with neat diagrams. | 10 |
| b | Explain the working of switch, justify how it is advantageous over hub and repeater. | 10 |
| Q5 | | |
| a | An ISP grants 200.70.0.0/24 block of IP addresses. It is required to have at least 6 subnets and 30 host addresses per subnet. Perform subnetting and determine : 1) subnet mask 2) slash notation 3) broadcast address in first subnet. | 10 |
| b | Explain stop and wait, Go-Back-N and Selective repeat ARQ mechanisms with neat diagrams. | 10 |
| Q6 | | |
| | Write a short note on (Solve any 4) | 20 |
| a | HTTP (Hypertext Transfer Protocol) | |
| b | DNS (Domain Name System) | |
| c | Berkely API | |
| d | Wireless LAN | |
| e | Open loop congestion control | |