

ECS - TE sem VI Reg C'scheme Summer 2025

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 a neat diagrams wherever necessary.

Q1 Solve any four

- 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