



- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Assume suitable data whenever necessary.

1. a) What do you mean by Internet standard ? Explain in detail. 7
- b) Write a note on IEEE LAN standard. 7

OR

2. a) What are the different connecting devices ? Explain each in brief. Also mention the layer of OSI model in which the device operate. 8
- b) What is RFC ? Explain in brief. 6
3. a) What is subnetting, supernetting and address aggregation ? What is the purpose of subnet mask and supernet mask. 6
- b) Explain in detail with diagram **any one**. 7
- i) BOOTP ii) DHCP
- iii) ARP & RARP

OR

4. a) A host with IP address 110.76.81.17 send a limited broadcast packet to all host in the same network. What are the Source and destination IP address used in this packet ? 3
- b) In a network, the address of one computer is 211.178.24.56 and the address of another computer is 211.178.120.202. How many addresses are in between ? 3
- c) In a class B subnet, we know the IP address of one of the host and mask as given below 3
IP address : 182.44.82.16
Mask : 255.255.255.192
What is the first address of subnet, last address of subnet and Total addresses in network.
- d) Find the continues masking in each case. 4
- i) 1024 subnets in class A
- ii) 256 subnets in class C
- iii) 32 subnets in class C
- iv) 4 subnets in class B

5. a) What is the purpose of IGMP protocol ? Explain in brief. 7
b) What is RIP ? Explain in brief. 6

OR

6. a) An ICMP message has arrived with header in hexadecimal:- 4
05 00 11 12 11 03 03 02
i) What is the type of message ?
ii) What is the code ?
iii) What is the purpose of message ?
iv) What is the value of last 4 bytes ?
b) Write a note on **any two**. 9
i) Forwarding Techniques.
ii) IP Package.
iii) OSPF.
iv) Checksum calculation of IP datagram.

7. a) What are different TCP services ? Explain connection establishment and termination in TCP. 7
b) Define flow control and explain how its implemented in TCP. 6

OR

8. a) What is congestion control ? Explain in detail any one strategy. 7
b) What are different types of TCP timers ? Explain in brief. 6
9. a) What is MPLS ? How does MPLS works. 8
b) What are different types of signaling protocols ? What is the purpose of signaling protocol. 6

OR

- 10 a) Write notes on **any two**. 14
i) LDP Messages.
ii) Traffic Engineering.
iii) ECMP.
iv) SBR.
11. a) Explain IPv₆ with respect to following terms. 8
a) Packet format.
b) Types of address.
c) Comparison of IPv₆ and IPv₄.

- b) Explain interoperation between IPv₄ and IPv₆. 5

OR

12. a) What are different modes of IP security protocol ? Explain. 7
b) What is ESP ? Explain. 6
