

S.No. 8041

24DLCSA1E01

(For the candidates admitted from 2024-25 onwards)

M.C.A. DEGREE EXAMINATION, AUGUST 2025.

First Semester

NETWORK PROTOCOLS

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions

1. Define the term “routing” in computer networks.
2. Comment on port number.
3. Recall the purpose of routing protocol.
4. What type of protocol is OSPF?
5. State the use of MPLS.
6. Define anycast addressing.
7. Name any two differences between IPv4 and IPv6.
8. List any two types of private wire services.
9. Define Denial-of-Service attack.
10. What is multihoming?

PART B — ($3 \times 5 = 15$ marks)

Answer any THREE questions.

11. Identify the key features and header format of the User Datagram Protocol.
12. Differentiate between peering and transit in ISP interconnection.
13. Explain how QoS is implemented in IPv4 networks.
14. Compare Layer-2 VPN and Layer-3 VPN with examples.
15. Discuss any two security threats related to IP mobility.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL the questions.

16. (a) Describe the structure and working of the Internet Protocol (IP) with diagram.

OR

- (b) Explain flow control and error control mechanisms in TCP.
17. (a) Compare open shortest path first and border gateway protocol based on working principles and use cases.

Or

- (b) Apply the concept of peering to reduce ISP costs and improve speed.
18. (a) Analyze the role of Internet Exchange Points in global internet performance.

Or

- (b) Explain how Differentiated Services work in IP networks.
19. (a) Explain the types of private wire services and how they are used in enterprise networking.

Or

- (b) Explain how IP packet forwarding is handled in IPv6 compared to IPv4.
20. (a) Compare and contrast various mobility management approaches and their impact on network performance.

Or

- (b) Describe the extended shortest-path-based routing schemes.
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