QP Code:CSM43-3 **(Pages:2)**

Reg No : ..... Name : .....

MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(Govt. Aided Autonomous Institution)

Fourth Semester B.Tech. Degree Examination, May, 2026

Course Code: B24CSM43

Course Name: INTRODUCTION TO COMPUTER NETWORKS

Max. Marks: 100 Duration:3 Hours

PART - A: 30 Marks (10 Qns x 3 Marks)

Answer all questions

1. What are service primitives? List any two service primitives with its meaning.
2. List the four layers of the TCP/IP reference model.
3. Arrange the following devices based on the OSI layer they operate in: Repeater, Bridge, Router.
4. Explain the concept of parity checking.
5. Explain the categories of destination address in IPv6.
6. What is link-state database(LSDB). Give an example.
7. Why is UDP called a connectionless protocol?
8. What is the difference between slow start and congestion avoidance?
9. What is FTP? State its purpose.
10. Explain the client–server model with an example.

PART - B: 70 Marks (5 Qns x 14 Marks)

Answer any One full question from each module.

Module 1

11. Explain the different line coding schemes with example.

OR

12. Explain the different types of computer networks based on scale.

Module 2

13. Explain HDLC protocol in detail.

OR

14. Explain in detail on IEEE 802.11.

Module 3

15. Explain in detail about UDP with necessary diagram.

OR

16. a. What is Resource Reservation protocol. (7 marks)

b. Compare leaky bucket and token bucket algorithms. (7 marks)

Module 4

17. Explain the structure of a TCP segment in detail with necessary diagram.

OR

18. a. Explain the TCP Finite State Machine (FSM) and describe the states involved during connection establishment. (7 marks)

b. Discuss the concepts of piggybacking, pushing data, and urgent data in TCP. How do they affect data delivery? (7 marks)

Module 5

19. Explain the types of P2P networks and also explain the key characteristics.

OR

20. a. Explain Denial of Service (DoS) and Distributed DoS attacks. (8 marks)

b. Describe methods to prevent DoS attacks. (6 marks)

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