

Roll Number: \_\_\_\_\_

Total No. of Pages: \_\_\_\_

Total No. of Questions: 09

Course: B.Tech (AIML)/ B.Tech (IT) , Semester: 6th/4th

Subject Name: Computer Network

Subject Code: BTCS 504–18

MST-2 - (Date of Exam: 15/April/2025), Session: M

Time: 1:30 hr

Max Marks: 24

Instructions to Candidates:

- **Section A (Compulsory):** All questions are mandatory. Each question carries 2 marks.
- **Section B (Attempt any 2 out of 3):** Attempt any two questions from. Each question carries 4 marks.
- **Section C (Attempt any 1 out of 2):** Attempt any one question. Each question carries 8 marks.
- Students will not be permitted to leave the examination hall within the first one hour.

SEC	A	A	A	A	B	B	B	C	C
Q/NB	1	2	3	4	5	6	7	8	9
Map with Co	CO3	CO4	CO3	CO3	CO3	CO3	CO4	CO3	CO4
Map with Bloom's Level	L1	L2	L1	L2	L4	L3	L4	L6	L5

### Section-A

1. Recall the definition of congestion control in networking.
2. Explain the purpose of DNS.
3. What are two differences between BOOTP and DHCP?
4. Compare TCP and UDP protocols in terms of reliability and connection.

### Section-B

5. Analyze the structural and functional differences between IPv4 and IPv6. How do these differences impact performance and scalability?

- 6 Identify how Bluetooth and TELNET can be used in a home or office network setup.
7. Analyze the stages of TCP connection establishment and termination. How do they ensure reliable communication?

### **Section-C**

8. Design a network traffic shaping policy using a hybrid approach combining Leaky Bucket and Token Bucket algorithms. Explain your design and provide a sample use case.
9. Assess the importance of cryptographic techniques (symmetric, asymmetric, and hashing) in ensuring data security in e-commerce applications.

**Note:** Disclosing your identity by writing your mobile number or marking a passing request on any page of the answer sheet will result in an Unfair Means Case (UMC) being filed against the student."