



**Term Evaluation (Odd) Semester Examination September 2025**

Roll no.....

Name of the Course: MCA

Semester: I

Name of the Paper: Computer Networks

Paper Code: TMC-102

Time: 1.5 hour

**Maximum Marks: 50**

**Note:**

- (i) Answer all the questions by choosing any one of the sub-questions
- (ii) Each question carries 10 marks.

Q1. (10 Marks)  
a. Describe the OSI reference model. Explain the functions of each layer in detail. (CO1)

OR

b. Define the following types of delays with examples: (CO2)  
(i) Processing delay  
(ii) Queuing delay  
(iii) Transmission delay  
(iv) Propagation delay

Q2. (10 Marks)  
a. Differentiate between circuit switching and packet switching. Provide one real-life example of each. (CO1)

OR

b. Explain the principles of network applications and the client-server architecture. (CO2)

Q3. (10 Marks)  
a. Explain SMTP, POP3, and IMAP protocols with their roles in email communication. (CO2)

OR

b. Describe the TCP/IP protocol stack and compare it with the OSI model. (CO1)

Q4. (10 Marks)  
a. Explain HTTP message formats and the role of cookies and proxy servers. (CO2)

OR

b. Explain DNS resource records and how DNS messages are exchanged between client and server. (CO1)



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Q5.

(10 Marks)

- a. Discuss Internet access networks and compare broadband, fiber, and wireless connections.  
(CO2)

OR

- b. Write a short note on BitTorrent and peer-to-peer file distribution. Explain how file sharing happens in this architecture.  
(CO1)