

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BCA/MCA INTEGRATED – SEMESTER 3 – EXAMINATION – SUMMER 2026

Subject Code: BC03001031

Date: 19/05/2026

Subject Name: COMPUTER NETWORKING

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Use of simple calculators and non-programmable scientific calculators are permitted.**

- Q.1** (a) Define a Computer Network. Explain categories of Computer Networks in detail **07**
(b) Explain the OSI Reference Model in detail. Describe the functions of each layer with a neat diagram **07**
- Q.2** (a) Differentiate between connection-oriented and connection less services with suitable examples **07**
(b) Explain the Public Switched Telephone Network in detail. **07**
OR
(b) What is fiber optic cable? Explain its structure and working principle. **07**
- Q.3** (a) Explain Radio and Microwave transmission with their uses **07**
(b) What is electromagnetic spectrum? Explain with diagram. **07**
OR
- Q.3** (a) Explain Go-Back-N and Selective Repeat protocols in terms of working, efficiency, and retransmission. **07**
(b) What is error detection technique? List all and explain any one error detection technique with example **07**
- Q.4** (a) What is ALOHA protocol? Explain its working and types in detail **07**
(b) Define the approaches of Congestion Control in brief. **07**
OR
- Q.4** (a) Explain the working of Carrier Sense Multiple Access protocols in detail. **07**
(b) What is hidden station and exposed station problem? Give the solution **07**
- Q.5** (a) Explain the Shortest Path Algorithm in detail. Show how it finds the shortest path with a neat diagram **07**
(b) Explain Domain Name System in detail with diagram **07**

OR

- Q.5** **(a)** Explain IPv4 Classfull Addressing in detail. **07**
- (b)** Explain Link State Routing in detail with diagram **07**

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
BCA/MCA INTEGRATED - SEMESTER - III EXAMINATION - WINTER 2025

Subject Code: BC03001031

Date: 03-12-2025

Subject Name: Computer Networking

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Use of simple calculators and non-programmable scientific calculators are permitted.**

	Marks
Q.1 (a) What is Computer Network? Explain types of Computer networks.	07
(b) What are the functions of OSI reference model layers?	07
Q.2 (a) List and explain Guided Transmission media.	07
(b) Differentiate TDM and FDM.	07
OR	
(b) What is Switching? List and Explain types of Switching.	07
Q.3 (a) What is Stop and Wait protocol? explain with sliding window.	07
(b) Discuss the working of slotted aloha with its efficiency in terms of channel utilization.	07
OR	
(a) What is the use of Data Link Layer? Explain the Functions of Data Link Layer.	07
(b) Explain Wireless Protocols with advantages and disadvantages.	07
Q.4 (a) Explain Link State Routing algorithm in detail.	07
(b) How the vector of distance for each router is built in distance vector routing protocol? What is count-to-infinity problem in it?	07
OR	
(a) Explain IPv4 classful addressing in brief.	07
(b) What is the use of transport layer? Explain the functions of transport layer.	07
Q.5 (a) What is DNS? How does DNS work? Explain the hierarchy of DNS servers.	07
(b) Explain WWW in details.	07
OR	
(a) Differentiate HTTP v/s HTTPS.	07
(b) What is E-mail? Explain types of E-mail format.	07
