

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:3143201

Date:12-05-2025

Subject Name: Data Communication & Computer Networks

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. **Simple and non-programmable scientific calculators are allowed.**

		Marks
Q.1	(a) Differentiate Simplex, Half Duplex, and Full Duplex.	03
	(b) Explain Serial Transmission and Parallel Transmission	04
	(c) Explain TCP/IP Reference Model with Diagram. (Brief Description of Each Layer Protocols).	07
Q.2	(a) What is Error Detection? Explain Types of Errors.	03
	(b) Differentiate between Analog Signal and Digital Signal.	04
	(c) Explain Cyclic Redundancy Check with Example: Suppose the original data is 11100 and divisor is 1001.	07
OR		
	(c) What is Delay? List and Explain Types of Delays.	07
Q.3	(a) Write Full Form: ARP, DNS, HTTP, OSI, ICMP and SMTP.	03
	(b) Differentiate between TCP and UDP.	04
	(c) Explain Go Back N Protocol in detail.	07
OR		
Q.3	(a) Define following terms: ASK, FSK and PSK.	03
	(b) List out and Explain Classification of IPv4 Addresses (Classful Addressing).	04
	(c) Explain Sliding Window Protocols with Proper Diagram.	07
Q.4	(a) Difference between IPv4 and IPv6.	03
	(b) Write a short note: NAT.	04
	(c) What is Aloha Protocol? Explain Types of Aloha Protocols.	07

OR

- Q.4** (a) Write a short note: FDDI. **03**
(b) Explain in detail FDMA and TDMA with diagram. **04**
(c) Explain Distance Vector Routing with Example. **07**

- Q.5** (a) Draw and explain Working Diagram of MIME Protocol. **03**
(b) Draw and Explain Symmetric cryptography. **04**
(c) List out MAN Protocols. Draw and explain ATM Layers. **07**

OR

- Q.5** (a) What is firewall? List out types of firewalls. Explain Packet-filtering firewall. **03**
(b) What is HTTP? Explain Types of HTTP Connections. **04**
(c) Write a Public key Algorithms (RSA Algorithms) with example. **07**
