

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code:2161103

Date:26-05-2025

Subject Name:Telecommunication Switching systems and 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) Define Blocking Probability	03
	(b) Explain SPC in brief.	04
	(c) Draw & Explain Manual Switching System.	07
Q.2	(a) Define: (a) Side Tone (b) Erlang.	03
	(b) Explain side tone coupling circuit and its importance in telephone.	04
	(c) Draw & Explain Subscriber Loop Systems.	07
	OR	
	(c) Differentiate between Circuit switching & Packet Switching.	07
Q.3	(a) Write a short note on Star topology.	03
	(b) Explain Time Multiplexed Space Switching.	04
	(c) Draw & Explain three-stage combination switching.	07
	OR	
Q.3	(a) Define connection oriented and connection less protocol.	03
	(b) Explain Inchannel Signaling.	04
	(c) Explain ISO-OSI Reference Model.	07
Q.4	(a) Define Grade of Services.	03
	(b) Discuss the operation and working of SS7.	04
	(c) Explain Data transmission in PSTNs.	07
	OR	
Q.4	(a) Explain channel association signaling with necessary diagram.	03
	(b) Differentiate single stage and multistage network.	04
	(c) Explain Broadband ISDN.	07
Q.5	(a) Explain in brief: Cellular mobile telephony.	03
	(b) Explain the load sharing mode of centralized SPC.	04
	(c) Explain Blocking Models and Loss Estimates.	07
	OR	
Q.5	(a) Explain Enhanced Services of Electronic Space Division Switching.	03
	(b) Explain Switching Hierarchy and Routing.	04
	(c) Describe Birth-Death process with the help of state transitions in context of Telephone traffic.	07