

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024

Subject Code:2161103

Date:28-11-2024

Subject Name:Telecommunication Switching systems and Networks

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. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Define (1) Erlang (2) Transit Exchange (3) Grade of service.	03
	(b) Give classification of Switching systems.	04
	(c) Briefly describe all the elements of manual switching circuit.	07
Q.2	(a) Discuss briefly about cross point matrix and its importance in connection making between called and calling user in telephone system.	03
	(b) Explain the working of Touch-tone dialing keypad in telephone.	04
	(c) Explain briefly the concept of Common Control Switching (CCS) in telecommunication.	07
	OR	
	(c) Differentiate between Circuit switching & Packet Switching.	07
Q.3	(a) State the difference between single stage and multistage stage space division switching.	03
	(b) Explain the load sharing mode of centralized SPC.	04
	(c) Describe briefly about distributed SPC with the Level- 1, Level-2 and Level-3 processing and their individual functionality assigned.	07
	OR	
Q.3	(a) Explain BRI and PRI in detail.	03
	(b) Compare: Micro-programmed control & Hard-wired control.	04
	(c) Draw & Explain n-stage combination switching.	07
Q.4	(a) Define connection oriented and connection less protocol.	03
	(b) Elaborate Lost Calls Returned System.	04
	(c) Draw and explain Working of EPABX in brief.	07
	OR	
Q.4	(a) Discuss Markov Process in brief.	03
	(b) Detail the operation and working of SS7.	04
	(c) Discuss network architecture of ISDN.	07
Q.5	(a) Explain in brief: Data transmission in PSTN.	03
	(b) Explain the need of jamming signal in CSMA protocols.	04
	(c) Explain ISO-OSI Reference Model.	07

OR

- | | | | |
|------------|------------|--|-----------|
| Q.5 | (a) | Explain Bit stuffing related to data Link Layer. | 03 |
| | (b) | Explain Enhanced Services of Electronic Space Division Switching. | 04 |
| | (c) | Explain slotted ALOHA in detail and derive the equation of Throughput. | 07 |
