Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 173204 Date: 04-12-2014

Subject Name: Telecommunication Engineering

Time: 10:30 am - 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.**

Q.1	**(a)**	Define : (1) Erlang (2) Ping-Pong effect (3) CCR (4) BHCA (5) Transit exchange (6) Folded network (7) Grade of Service (GOS)	**07**
	(b)	What is SPC? Discuss operations of Standby mode and synchronous duplex mode of stored program control.	**07**
Q.2	**(a)**	Give classification of switching systems & In what way is stored program control superior to hard wired control?	**07**
	(b)	Explain N X N three stage network. Draw the Lee's graph to discuss its blocking probability.	**07**
		OR	
	(b)	What are the broad categories of the enhanced services? Discuss three-party Conferencing connection.	**07**
Q.3	**(a)**	With the help of block diagram explain Input controlled time division space switch.	**07**
	(b)	[1] A subscriber makes three phone calls of three minutes, four minutes and two minutes duration in a hour period. Calculate the subscriber traffic in erlang, CCS and CM. [2] Over a 20-minute observation interval, 40 subscribers initiate calls. Total duration of the calls is 4800 seconds. Calculate the load offered to the network by the subscribers and the average subscriber traffic.	**07**
		OR	
Q.3	**(a)**	Explain in detail with diagrams of Time slot interchange switch (TSI).	**07**
	(b)	Discuss Single stage Vs Multi stage Network.	**07**
Q.4	**(a)**	Classify Signaling technique & Discuss architecture of SS7.	**07**
	(b)	Explain in detail level 3 processing of distributed SPC. Also compare micro programmed and hard wired control.	**07**
		OR	
Q.4	**(a)**	Draw and explain the block diagram of a pulse code modulation system for Speech communication.	**07**
	(b)	Expalin Time Multiplexed Space Switching.	**07**
Q.5	**(a)**	Discuss Markov and Birth-death processes in detail.	**07**
	(b)	Draw and explain the basic scheme for Common Channel Signalling.	**07**
		OR	
Q.5	**(a)**	Explain in detail LCC system with finite subscribers with derivation of blocking probability and GOS.	**07**
	(b)	Write a short note on Cellular Mobile Telephony	**07**

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