Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2161103 **Date:11/05/2016**

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.**

Q.1	**(a)**	Draw and explain simplex and half-duplex telephone circuits with necessary equations.	**07**
	(b)	Draw and explain signaling tones in automatic exchanges.	**07**
Q.2	**(a)**	1. 100 line strowger switching system has 100 uni-selectors, one for each subscriber, in first stage. The second stage has 20 uni-selectors. The second stage outlets are folded back to the corresponding inlets. Find out TC, EUF and CCI for this design. Assume cost of uni-selector as one unit.	**03**
		2. Calculate unavailability for single and dual processor systems if MTBF=1000 hrs. and MTTR=2 hrs.	**02**
		3. An exchange serves 5000 subscribers. If the average BHCA is 20,000 and the CCR is 50%, calculate the busy hour calling rate.	**02**
	(b)	Explain rotary dial telephone parts and mechanism with the help of neat diagram.	**07**
		OR	
	(b)	Explain drive mechanism of a rotary switch.	**07**
Q.3	**(a)**	Discuss centralized SPC in detail.	**07**
	(b)	Draw and explain selector hunter and line finder based subscriber access approaches used in step by step Strowger switching system.	**07**
		OR	
Q.3	**(a)**	Discuss touch tone dial arrangement and touch tone receiver scheme.	**07**
	(b)	Classify switching systems. Discuss elements of a switching system in detail	**07**
Q.4	**(a)**	Discuss basic time division space switching with necessary switch configurations.	**07**
	(b)	1. Compare: Single stage vs. Multistage networks	**07**
		2. Compare: Micro-programmed control vs. Hard-wired control	
		OR	
Q.4	**(a)**	Classify signaling techniques. Discuss SS7 architecture in detail.	**07**
	(b)	Discuss Markov and Birth-death processes in detail.	**07**
Q.5	**(a)**	Draw and explain layered architecture of ISO OSI reference model.	**07**
	(b)	Compare: Circuit switching vs. Packet switching with necessary diagrams.	**07**
		OR	
Q.5	**(a)**	Draw and explain functional block diagram of EPABX system.	**07**
	(b)	Classify ISDN services. Draw segregated and integrated ISDN architecture. List out transmission channels of ISDN with its data rates.	**07**

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