Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 181201

Subject Name: Telecommunication Transmission and Switching

Date: 10/05/2012 **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)**	Explain Simplex Telephone Communication & also explain how microphone and earphone works?	**07**
	(b)	i) Classification of Switching systems.	**04**
		ii) Define the following terms: • Sidetone • Junctors • Transit exchange	**03**
Q.2	**(a)**	Explain Enhanced services of stored program control.	**07**
	(b)	Explain Touch tone dial telephone & its receiver scheme.	**07**
		OR	
	(b)	Explain different operating modes of dual processor in centralised SPC.	**07**
Q.3	**(a)**	A telephone exchange having total no. of subscriber is 10, normally experiences 8 calls terminate per 2 min. in peak hour, what is the probability that exactly 8 calls terminate in an arbitrary chosen interval of 30 sec.?	**07**
	(b)	Explain 3-stage Non-Blocking configuration of electronic space division switching system.	**07**
		OR	
Q.3	**(a)**	Explain Lee's graph for a 3-stage network, and designed with the following parameters: M=N=512 , p=q=16 & α=0.7 Calculate the blocking probability of the network if s= 16, and s= 24.	**07**
	(b)	Explain 3-stage time & space combination switch in time division switching system.	**07**
Q.4	**(a)**	In a TS switch, M=128, N=16 and the number of subscribers connected to the system in 0.1MN. determine the blocking probability of the switch if i) The entire subscribers are active at the same time. ii) Only 50 % of the subscribers are active simultaneously.	**07**
	(b)	Explain Birth-Death Processes.	**07**
		OR	
Q.4	**(a)**	Explain LCC model with Infinite sources.	**07**
	(b)	A call processor in an exchange requires 120 ms to service a complete call. What is the BHCA rating for the processor? If the exchange is capable of carrying 700 Earlng of traffic, what is the CRR? Assume an average call holding time of 2 minutes.	**07**

Q.5	**(a)**	Explain salient features of ISDN and also draw stack diagram of ISDN protocol architecture.	**07**
	(b)	Explain numbering plan to uniquely identify every subscriber.	**07**

OR

Q.5	**(a)**	Explain architecture of SS7 Common Channel Signaling System.	**07**
	(b)	Describe the terms of GOS & blocking probability (P_b), and also explain how both the terms are different, with suitable example.	**07**

****