Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – SUMMER 2013

Subject Code: 130902 **Date: 27-05-2013**

Subject Name: Analog and Digital Electronics

Time: 02.30 pm - 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.**

Q.1	**(a)**	Explain OP-AMP as a comparator.	**07**
	(b)	State and explain De Morganôs theorem.	**07**
Q.2	**(a)**	Write short note on D flip flop.	**07**
	(b)	Define any seven OP-AMP parameters.	**07**
		OR	
	(b)	Explain Direct coupled and RC coupled amplifiers with its frequency response.	**07**
Q.3	**(a)**	Write short note on integrator.	**07**
	(b)	Describe astable multivibrator based on IC 555 and OP-AMP.	**07**
		OR	
Q.3	**(a)**	Draw and explain basic block schematic of 78XX series three terminal voltage regulator ICs.	**07**
	(b)	Explain binary addition, subtraction, division and multiplication with example.	**07**
Q.4	**(a)**	Write short note on gray code.	**07**
	(b)	Explain NOR gate as a universal gate.	**07**
		OR	
Q.4	**(a)**	Define any seven performance characteristics of digital ICs.	**07**
Q.4	**(b)**	Write down truth tables for BCD to seven segment decoder for common anode and common cathode display.	**07**
Q.5	**(a)**	Write short note on half adder and full adder.	**07**
	(b)	Explain S-R flip flop.	**07**
		OR	
Q.5	**(a)**	Write down modes of operation of shift register. Explain any one mode of operation in detail.	**07**
	(b)	What is the basic difference between synchronous and asynchronous counter? Explain four bit synchronous up counter.	**07**

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