Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (New) EXAMINATION – WINTER 2015

Subject Code:2140910 **Date:22/12/2015**

Subject Name: Digital Electronics

Time: 2:30pm to 5:00pm **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)**	Give classification of binary codes with some example and short explanation.	**07**
	(b)	Define universal gate. Prove that NAND and NOR gates are universal gates.	**07**
Q.2	**(a)**	Convert: (i) $(314.24)_8$ to $(\_\_\_\_\_)_{10}$ (ii) $(250.58)_{10}$ to $(\_\_\_\_\_)_8$	**07**
	(b)	Explain in brief about error detection and correction codes.	**07**
		OR	
	(b)	Simplify Y=A'BCD' + BCD' + BC'D' + BC'D and implement using NAND gates only.	**07**
Q.3	**(a)**	Explain CMOS NOR gate.	**07**
	(b)	Write short note on K-map.	**07**
		OR	
Q.3	**(a)**	Explain two input TTL NAND gate.	**07**
	(b)	Express A'B + A'C as sum of minterms and also plot K-map.	**07**
Q.4	**(a)**	Write short note on half adder and full adder.	**07**
	(b)	What is positive and negative edge triggering? Explain SR flip flop with negative edge triggering.	**07**
		OR	
Q.4	**(a)**	Explain multiplexer.	**07**
	(b)	Differentiate between excitation table and truth table. Write excitation table for J-K flip flop.	**07**
Q.5	**(a)**	Write a note on EEPROM.	**07**
	(b)	Explain working of ring counter.	**07**
		OR	
Q.5	**(a)**	Explain binary weighted resistor digital to analog converter.	**07**
	(b)	Classify memory. Differentiate between RAM and ROM.	**07**

****