Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–I(New course)• EXAMINATION – WINTER- 2015

Subject Code: 2715403 **Date: 04/01/2016**

Subject Name: Electronics System Design

Time:2:30 pm to 5:00 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)**	What is the difference between passive and active components? Choose any one active component and write any four technical specifications for this component which you will search in its data sheet.	**07**
	(b)	Discuss effects of environmental factors on Electronic Systems.	**07**
Q.2	**(a)**	Write and explain advantages and disadvantages of BiCMOS family logic.	**07**
	(b)	Define following Power Supply Characteristics: (i) Form Factor (ii) Efficiency (iii) Ripple Factor (iv) Load Regulation.	**07**
		OR	
	(b)	Attempt any two (i) How to classify EMI (ii) List out reasons behind non-ideal behavior of passive components. (iii) Compare Ideal Op-Amp & 741 (Ri, Ro, CMRR etc...)	**07**
Q.3	**(a)**	Write a short note on PCB design guidelines for reduced EMI.	**07**
	(b)	What is the purpose of having input and output capacitors in three terminal IC regulators and list out the advantages of IC voltage regulators?	**07**
		OR	
Q.3	**(a)**	Draw and explain Instrumentation Amplifier using an Op-Amp with necessary output equations.	**07**
	(b)	Write comparison between CMOS and BiCMOS logic family.	**07**
Q.4	**(a)**	Write a short note on Packaging & Enclosures of Electronic System.	**07**
	(b)	Explain methods of noise coupling and methods of reducing interference in Electronic Systems.	**07**
		OR	
Q.4	**(a)**	Write short note on 'Software and ESD Protection.'	**07**
	(b)	Explain successive approximation type A/D Converter.	**07**
Q.5	**(a)**	Explain benefits and issues on migration of 5V to 3.3V logic.	**07**
	(b)	Draw and explain Narrowband Bandpass Filter circuit using Op-Amp with necessary equations.	**07**
		OR	
Q.5	**(a)**	Design of 5 Volt Regulated power supply. Draw circuit diagram for same.	**07**
	(b)	Explain Multipoint Ground Systems and Hybrid Grounds.	**07**

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