Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 715203 **Date: 10-01-2013**

Subject Name: Embedded Systems Software Design

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)**	What is an Embedded System? Explain with examples.	**07**
	(b)	What are the different components of an Embedded System? Explain with a block diagram.	**07**
Q.2	**(a)**	Tabulate and describe the differences between a microprocessor and microcontroller.	**07**
	(b)	What are the different types of ADC's? Explain any one type with a circuit diagram and timing diagram?	**07**
		OR	
	(b)	Explain operation of R-2R ladder DAC with a circuit diagram and timing diagram?	**07**
Q.3	**(a)**	Why C language is considered the most preferred language for programming Embedded systems?	**07**
	(b)	What is Embedded C? Explain how an Embedded C program is different from a regular C program?	**07**
		OR	
Q.3	**(a)**	What is a cross compiler? Why is this important in Embedded systems programming?	**07**
	(b)	What is Simulation of Embedded Systems? What are its advantages?	**07**
Q.4	**(a)**	Compare and contrast RISC Vs. CISC architectures?	**07**
	(b)	What are the different addressing modes in 8051? Explain with examples?	**07**
		OR	
Q.4	**(a)**	What are I/O devices? Give examples of Input devices, output devices and I/O devices.	**07**
Q.4	**(b)**	How does a PUSH and POP instruction affect the stack pointer?	**07**
Q.5	**(a)**	What is hand-off in a cellular network? Explain with a block diagram.	**07**
	(b)	What are the key components of a Mobile phone? Explain with a block diagram?	**07**
		OR	
Q.5	**(a)**	List the different application areas where Embedded systems are widely used.	**07**
	(b)	What is the importance of sensor in Embedded systems?	**07**

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