Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA- Vth SEMESTER–EXAMINATION –JUNE - 2012

Subject code: 650012 **Date: 15/06/2012**

Subject Name: Software Development for Embedded System (SD-ES)

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)**	1.	What is NRE cost?	**02**
		2.	Draw a standard template for (if-else if-else) condition for drawing FSMD.	**02**
		3.	Draw the basic architecture of general purpose processor.	**02**
		4.	Define Timer?	**01**
	(b)	1.	Compose 1k x 8 ROMs into 1k x 16 ROMs.	**02**
		2.	Draw two-level bus architecture.	**02**
		3.	What is zero-bias error? Explain zero-bias adjustment process in digital camera.	**03**
Q.2	**(a)**		List common design metrics. Explain time-to-market and performance design metrics.	**07**
	(b)		What do you mean by integrated chip (IC)? What do you mean by IC technology? In this context briefly explain and exemplify the different design styles involved in IC design technology.	**07**
			OR	
	(b)		Write an efficient algorithm for finding the GCD of two integer numbers. Also explain how the FSMD for this can be optimized.	**07**
Q.3	**(a)**		With suitable examples, enumerate the use of ADC (Analog to Digital Converter) in most popular embedded systems.	**07**
	(b)		Explain the features of EEPROM, SRAM and OTP ROM.	**07**
			OR	
Q.3	**(a)**		Explain in brief about Application Specific Instruction-Set Processors (ASIP).	**07**
	(b)		Describe fully associative and two-way set associative cache mapping techniques.	**07**
Q.4	**(a)**		Explain interrupt-driven I/O using fixed ISR location with figure.	**07**
	(b)		Explain the requirement specification of simple digital camera.	**07**
			OR	
Q.4	**(a)**		Write a short note on priority arbiter and daisy-chain arbitration.	**07**
	(b)		Explain the digital camera design using microcontroller and CCDPP.	**07**
Q.5	**(a)**		Describe Linker/Locators for Embedded Software.	**07**
	(b)		Describe objections of testing embedded system code on host systems.	**07**
			OR	
Q.5	**(a)**		Explain PROM programmers and ROM Emulators for getting embedded software into the target system.	**07**
	(b)		List different laboratory tools for testing embedded system. Explain any one in detail.	**07**

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