Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 2650012 **Date: 08-12-2014**

Subject Name: Software Development for Embedded Systems

Time: 10:30 am - 01:00 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)**	Write short note on IC Technology.	**07**
	(b)	List and explain common design metrics.	**07**
Q.2	**(a)**	Draw and explain basic architecture of General Purpose Processor	**07**
	(b)	Design sequential circuit for 3 bit counter that counts the sequence: 1, 3, 5, 7, 0, 2, 4, 6, 1, 3, …	**07**
		OR	
	(b)	Write short note	
		1. Pipelining	**03**
		2. Addressing modes	**04**
Q.3	**(a)**	What is cache mapping? List all types of cache mapping techniques and explain any two in detail with diagram.	**07**
	(b)	Explain Analog to Digital Converter in detail.	**07**
		OR	
Q.3	**(a)**	Write short note	
		1. Keypad Controller	**03**
		2. UART	**04**
	(b)	Compose 1K X 8 ROM into 2K X 16 ROM	**07**
Q.4	**(a)**	Explain bus structure with basic protocol concepts of Strobe and Handshake.	**07**
	(b)	Explain Interrupt-driven I/O using Vector interrupt with flow of action.	**07**
		OR	
Q.4	**(a)**	Write short note	
		1. Firewire	**02**
		2. Daisy Chain Arbitration	**05**
	(b)	Explain requirements specification of Digital Camera.	**07**
Q.5	**(a)**	Explain PROM programmers and ROM emulators for getting embedded software into the target system.	**07**
	(b)	Explain tool chain for building embedded software.	**07**
		OR	
Q.5	**(a)**	Explain instruction set simulators.	**07**
	(b)	Explain DBGMAIN.C, LEVELS.C and OVERFLOW.C.	**07**

****