Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject code: 1720107 **Date: 02/01/2013**

Subject Name: Embedded System

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)**	Explain stepper motor controller in detail.	**07**
	(b)	List the types of ADC. Explain any one of them in detail.	**07**
Q.2	**(a)**	Explain direct memory access in detail.	**07**
	(b)	Explain any two serial protocols in detail.	**07**
		OR	
	(b)	Explain UART with necessary block diagrams.	**07**
Q.3	**(a)**	Explain the importance of cache memory in embedded system design.	**07**
	(b)	Explain key pad controller in detail.	**07**
		OR	
Q.3	**(a)**	Give classification of memory with importance of each in short.	**07**
	(b)	Explain register banks and stack of 8051 microcontroller.	**07**
Q.4	**(a)**	Explain processes and threads in detail.	**07**
	(b)	Explain reader writer problem.	**07**
		OR	
Q.4		Give analysis of all possible combination of digital camera example in detail.	**14**
Q.5	**(a)**	List design metrics parameters for embedded system and explain any one of them in detail.	**07**
	(b)	Enumerate the microprocessor selection criteria for embedded application.	**07**
		OR	
Q.5	**(a)**	Explain the functional block diagram of 8051 microcontroller.	**07**
	(b)	Explain starvation and atomicity in detail.	**07**

****