Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 170805 **Date: 29-11-2014**

Subject Name: Embedded Systems and Applications

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)**	State any four features and applications of Embedded system.	**07**
	(b)	Explain Synchronous and Asynchronous communication.	**07**
Q.2	**(a)**	Explain the classification of an embedded system.	**07**
	(b)	Explain PCI and PCI-x bus in details.	**07**
		OR	
	(b)	Discuss power issues in embedded systems.	**07**
Q.3	**(a)**	Explain in brief: UART and HDLC.	**07**
	(b)	Explain the Object-Oriented Programming in an embedded system.	**07**
		OR	
Q.3	**(a)**	Explain Function Queues and Interrupt Service Routines Queues in pointers.	**07**
	(b)	Discuss hardware and Software synthesis in brief.	**07**
Q.4	**(a)**	Explain the Timer and Counting devices.	**07**
	(b)	Write various techniques for optimization of memory code for embedded C.	**07**
		OR	
Q.4	**(a)**	Explain SoC (System on Chip) in an embedded system.	**07**
	(b)	Discuss Assembly Language Programming (ALP) Vs High Level Language Programming.	**07**
Q.5	**(a)**	Write the use of VLSI designed circuits in embedded systems.	**07**
	(b)	Explain the real time Constraints, in RTOS.	**07**
		OR	
Q.5	**(a)**	Describe the need of RTOS in an Embedded System and state any two specifications of RTOS.	**07**
	(b)	State any four features of I2C and CAN Bus Protocol.	**07**

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