GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 170705   **Date: 03-12-2013**
Subject Name: Embedded Technology
Time: 10:30 TO 01:00   **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 are the challenges faced in designing an embedded system?	**07**
	(b)	How the embedded systems use in Communication and Networking? Also write it is Application.	**07**
Q.2	**(a)**	Give brief of RTOS task Scheduling Models?	**07**
	(b)	Explain interfacing of matrix keyboard with embedded processor. Also write programming steps.	**07**

<div align="center">OR</div>

	(b)	Compare preemptive and round robin scheduling strategies.	**07**
Q.3	**(a)**	Explain Cooperative round Robin Scheduling using a Circular Queue of Ready tasks?	**07**
	(b)	Explain serial communication using USART.	**07**

<div align="center">OR</div>

Q.3	**(a)**	What is a watchdog timer and why it is used? Which are the steps to connect with microcontroller?	**07**
	(b)	Discuss the block diagram of Digital camera as an embedded system.	**07**
Q.4	**(a)**	Write a Short note on RTLinux?	**07**
	(b)	What is scheduling? Discuss different types of scheduling algorithms in brief.	**07**

<div align="center">OR</div>

Q.4	**(a)**	Explain the RISC Processor?	**07**
Q.4	**(b)**	How does memory allocation differ in RTOS and OS? What is memory locking?	**07**
Q.5	**(a)**	Describe polled waiting loop and interrupt-driven I/O with example.	**07**
	(b)	What is interrupt? Discuss interrupt programming in assembly or C language.	**07**

<div align="center">OR</div>

Q.5	**(a)**	What are the features of UML?	**07**
	(b)	What is SoC? "SoC is a design innovation. Justify the statement,	**07**

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