Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – SUMMER • 2015

Subject Code: 170705 **Date: 06/05/2015**

Subject Name: Embedded Technology

Time:02.30pm-05.00pm **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 is design metric? List and explain all design metric parameters for embedded system.	**07**
	(b)	What is the difference between Data Flow Graph and Control Flow Graph model? Explain their significance in embedded system design.	**07**
Q.2	**(a)**	What are the criteria by which appropriate programming language is chosen for embedded software for given system?	**07**
	(b)	What are the advantages and disadvantages of writing embedded software in C language compared to assembly language? What are the situation in which programming in assembly language is necessary or appropriate.	**07**
		OR	
	(b)	What is real time operating system? Discus difference between real time operating system and general purpose operating system.	**07**
Q.3	**(a)**	Discuss the role of RTOS in interrupt handling and task scheduling?	**07**
	(b)	How infinite loop used in embedded system software? What are the advantages of re-entrant function in embedded system software?	**07**
		OR	
Q.3	**(a)**	Explain internet-enabled embedded system? What type of protocol is used in internet-enabled embedded system?	**07**
	(b)	Explain role of assemblers, compilers, and linkers in IDE? What is preprocessor?	**07**
Q.4	**(a)**	What is the difference between RISC and CISC processor? Explain the architecture of ATMEL RISC processor.	**07**
	(b)	What is meant by pipe? How does a pipe differ from queue?	**07**
		OR	
Q.4	**(a)**	Explain blind counting synchronization and Gadfly busy waiting?	**07**
	(b)	Explain the difference between port-based I/O and bus-based I/O?	**07**
Q.5	**(a)**	Explain interfacing of analog to digital convertor with 8051 microcontroller. Discus step for programming.	**07**
	(b)	What is network router and what its application in embedded system?	**07**
		OR	
Q.5	**(a)**	Discuss functional specification of digital camera?	**07**
	(b)	Write short note on cache memory and explain its significance in embedded system?	**07**

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