

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

**Subject Code: 170805****Date: 03/12/2013****Subject Name: Embedded Systems and Applications****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) Explain classification Embedded System and explain its application in detail. **07**  
(b) Define Embedded system and explain different units of Embedded system using block diagram in detail. **07**
- Q.2** (a) Compare RISC & CISC Architecture & Compare Harvard & Van Neumann Architecture for processor design in detail. **07**  
(b) Explain ISA and PCI buses in detail. **07**
- OR**
- (b) Explain USB bus in details. **07**
- Q.3** (a) What is synchronous and asynchronous communication and explain characteristics of synchronous communication. **07**  
(b) Define RTOS. Explain Power Constraints in Embedded system. **07**
- OR**
- Q.3** (a) Explain the Function Queues and Interrupt Service Routines Queues Pointers. **07**  
(b) Explain UART in detail. **07**
- Q.4** (a) Explain different programming languages. Compare Assembly Language Programming (ALP) and High Level Language programming. **07**  
(b) Explain the use of VLSI designed circuits in Embedded system. **07**
- OR**
- Q.4** (a) What multiple function calls in cyclic order in the main function pointers. **07**  
(b) Explain the Hardware and Software synthesis in RTOS. **07**
- Q.5** (a) Discuss the advantages and disadvantages of C++ in an embedded system. **07**  
(b) Applications of Embedded system in Process Control and Motor Speed Control **07**
- OR**
- Q.5** (a) Justify the Object-Oriented Programming in an embedded system. **07**  
(b) Explain the Timer and Counting devices. **07**

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