

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- V • EXAMINATION – WINTER 2016

Subject Code: 2650012

Date: 28/11/ 2016

Subject Name: Software Development for Embedded Systems

Time: 10.30 am to 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)** What do you mean by Design Technology? In this context explain top-down design process and productivity improvers. **07**
- (b)** Explain Embedded software development process with proper diagram. **07**
- Q.2 (a)** Design 3x8 decoder. Start from a truth table, use K-maps to minimize logic and draw the final circuit. **07**
- (b)** Draw FSM of single-purpose processor for GCD. **07**
- OR**
- (b)** Explain the role of Cross-Compiler, Cross-Assembler and Linker/Locator for embedded software. **07**
- Q.3 (a)** Explain basic architecture of general purpose processor. **07**
- (b)** Explain Microprocessor Interfacing using Interrupt-driven I/O. **07**
- OR**
- Q.3 (a)** Explain PROM programmers and ROM Emulators for getting embedded software into the target system. **07**
- (b)** Describe tool chain for building embedded system. **07**
- Q.4 (a)** Design Extended Parallel I/O Peripherals. Provide (i) a State machine description and (ii) a Structural Description. **07**
- (b)** Write a short note on Logic Analyzers. **07**
- OR**
- Q.4 (a)** Briefly describe RT-Level Sequential Components and Sequential Logic Design. **07**
- (b)** Explain Pulse Width Modulator (PWM). Describe the application of PWM in controlling a DC Motor. **07**
- Q.5 (a)** What are different methods of getting the image of the target software (for embedded systems) into the target system? Explain these methods. **07**
- (b)** Describe briefly In-circuit Emulators, and Software-only Monitors. **07**
- OR**
- Q.5 (a)** Short note on Laboratory Tools. **07**
- (b)** What you understand DOS based Program explain Overall Program Structure for DOS Program. **07**
