

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA– SEMESTER –V EXAMINATION –SUMMER-2019**

**Subject Code: 2650012**

**Date: 10-05-2019**

**Subject Name: Software Development for Embedded Systems**

**Time: 10.30 am to 1.00 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)** Define Following Terms:- **07**
1. CAN                                      2. NRE Cost                                      3. RISC    4. Cross Compiler  
5. Watch Dog Timer                      6. Microcontroller                      7. PLD
- (b)** What is an embedded system? Why is it so hard to define? **07**
- Q.2 (a)** List and define the three main IC technologies. What are the benefits of using each of The three different IC technologies? **07**
- (b)** What is the difference between Microprocessor and Microcontroller? **07**
- OR**
- (b)** Compute the percentage revenue loss if  $D = 5$  and  $W = 10$ . If the company whose product entered the market on time earned a total revenue of \$25 million, how much revenue did the company that entered the market 5 months late lose? **07**
- Q.3 (a)** What are combinational circuit and a sequential circuit explain with Example. **07**
- (b)** What is a Single-Purpose Processor? What are the benefits of choosing a Single-Purpose Processor over a General-Purpose Processor? **07**
- OR**
- Q.3 (a)** Describe Fully Associative and Two Way Set Associative Cache mapping techniques. **07**
- (b)** Short note on DMA for microprocessor interfacing **07**
- Q.4 (a)** Sketch the internal design of a  $4 \times 3$  RAM. **07**
- (b)** What is Universal Asynchronous Receiver / Transmitter (UART)? Write down its basic characteristics. What are the configuration requirements before using UART? **07**
- OR**
- Q.4 (a)** Discuss the advantages and disadvantages of using memory-mapped I/O versus standard I/O. **07**
- (b)** Briefly define each of the following: Mask-Programmed ROM, PROM, EPROM, EEPROM, flash EEPROM, RAM, and NVRAM. **07**
- Q.5 (a)** Describe tool chain for building embedded system. **07**
- (b)** Explain Requirement Specification for Digital Camera also draw the block diagram for digital camera. **07**
- OR**
- Q.5 (a)** Describe Linker / Locator for Embedded Software. **07**
- (b)** Explain the Assembler and Cross Assembler. **07**

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