B.E.(with Credits)-Regular-Semester 2012-Computer Technology Sem VII

# Elective-I : CT - Embedded System

P. Pages : 2 **GUG/W/16/6548**

Time : Three Hours * 4 6 8 4 * Max. Marks : 80

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Notes : 1. All questions carry equal marks.
2. Illustrate your answer wherever necessary with the help of neat sketches.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.

**1.** a) List and explain the abstraction of steps involved in the design process of Embedded systems. **8**

b) What are the challenges involved in Embedded system design. Explain in detail. **8**

**OR**

**2.** a) Write short notes on processor Embedded into a system. **8**

b) Write in detail regarding the hardware units and devices involved in Embedded system. **8**

**3.** a) Write short notes on Task and Task states with suitable example. **8**

b) Define semaphore and list various semaphores that can be used in variety of situations along with detailed explanation. **8**

**OR**

**4.** a) Explain in detail pipe & mail box used by RTOS. **8**

b) Write short notes on Memory Management strategy of RTOS. **8**

**5.** a) Write about Linker/Locator for Embedded system and also discuss how it resolves the issue of Address Resolution. **8**

b) Write short notes on debugging Techniques used in Embedded Software Development. **8**

**OR**

**6.** a) Write short notes on C program elements used for Embedded programs. **8**

b) Write short notes on Embedded software Development tools used for Host and Target Machines. **8**

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| **7.** | a) | Write short notes on Basic Functions and types of RTOS. | **8** |
| | b) | What are the considerations to be made in Hard Real Time Scheduling. | **8** |

**OR**

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| **8.** | a) | Explain system level functions of RTOS µcos. | **8** |
| | b) | List and explain the principles of Basic design using a Real time operating system. | **8** |
| **9.** | a) | Write short notes on Architecture of 8051 Micro Controller. | **8** |
| | b) | Write with help of example Addressing modes of 8051 Micro Controller. | **8** |

**OR**

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| **10.** | a) | Write short notes on Interrupts of 8051 and how it can be handled. | **8** |
| | b) | Write a program to copy the byte in TCON to register $R_2$ using atleast four different methods. | **8** |

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