

**B.Tech (Sem.VI) (Main) Examination, May/June-2011**

**Computer Engineering**

**6CS5 EMBEDDED SYSTEM DESIGN**

**(Common to Comp. Engg. and Info Tech)**

**Time: 3 Hr.**

**Maximum Marks: 80**

**Min. Passing Marks: 24**

*Instructions to Candidates:*

*Attempt any five questions selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used calculated must be stated clearly.)*

**Unit-I**

- Q.1 (a) Define an 'embedded System'. Give specific features of embedded systems. In this context how is micro controller different from a microprocessor?  
(b) How is embedded system developed both in hardware and software. [8+8]

**OR**

- Q.1 (a) How important is power dissipation in microcontrollers? Throw light on this issue.  
(b) What is system-on-chip (SOC) in embedded system. Explain by taking a specific example. [8+8]

**Unit-II**

- Q.2 (a) What is meant by a RISC architecture. Briefly describe architecture of MSP 430 by drawing necessary diagram.  
(b) Discuss about I/O port, timers and counters of MSP 430. [8+8]

**OR**

- Q.2 (a) Discuss MSP 430 interfacing to a stepper motor.  
(b) Discuss keyboard interfacing to MSP 430. [8+8]

**Unit-III**

- Q.3 What are ARM processor? Discuss the registers, program status register and instruction set. [16]

**OR**

What are interrupt in ARM processor? Describe it with vector table. [16]

- Q.4 (a) What are addressing modes used in 8051? What are SFRs? What is their function. [8]  
(b) Discuss Ports, pins and Circuits in 8051. [8]

**OR**

Write 10 different instructions in 8051 and explain them. [16]

**Unit-V**

- Q.5 Discuss the application of embedded system in Data acquisition. [16]

**OR**

Discuss the application of embedded systems in wireless sensor networks. [16]