Code: R7410405

R07

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013
MICRO CONTROLLERS AND APPLICATIONS
(Electronics and Communication Engineering)

Time: 3 hours   Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1 (a)   Describe the various resources of a microcontroller.
   (b)   Explain the architecture of 8051 microcontroller in detail.

2 (a)   Give any two examples for program control flow instruction and explain.
   (b)   Explain the use of SFRs.

3 (a)   Explain the interrupt structure of 8051 microcontroller.
   (b)   What is interrupt latency? Explain how the interrupt latency is calculated. Explain how the worst case interrupt latency is calculated.

4 (a)   What are real time clock interrupts? Give an example.
   (b)   Differentiate programmable and free running timers.

5 (a)   Explain how intelligent LCD displays can be interfaced with 8051 microcontroller. Write an assembly language program for the same.
   (b)   Briefly explain the architecture of keyboard cum display controller (8279).

6 (a)   How many mutex management function calls are there in RTOS and what are they?
   (b)   Explain the importance of semaphores in multitasking system where task synchronization is achieved by this.

7 (a)   Explain the software timer interrupts in 80196. Justify the priority orders provided in 80196 for the maskable interrupts.
   (b)   Why should the input to timer 2 from an external event be slower than $4\ \mu s$? Assume a 12 MHz crystal is available with 80196.

8 (a)   How can we change through instructions in ARM? Explain different PSR instructions in ARM.
   (b)   Differentiate RISC and CISC processors.

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