

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  $4\ \mu\text{s}$ ? 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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