

Code: R7410405

R7

IV B.Tech I Semester (R07) Supplementary Examinations, May 2012
MICROCONTROLLERS AND APPLICATIONS
(Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Draw and explain the architecture of 8051 microcontroller.
(b) What are the different timers available in 8051 microcontroller? Explain any one of them with suitable architecture.
2. (a) List out the arithmetic instructions present in 8051 family microcontrollers instruction set. Explain any two of them with relevant examples.
(b) Illustrate the instructions for logical operations among the special function registers.
3. (a) Explain the concepts of 'Interrupt Latency' and 'Interrupt Deadline'.
(b) Elaborate the procedure for enabling or disabling the interrupt sources.
4. (a) Explain the concepts of interrupt interval and density constraints related to real time control.
(b) Discuss about programmable timers in the microcontroller units.
5. (a) With suitable sketch explain how a programmable instrument interface using IEEE 488 bus.
(b) Discuss about industrial process control system.
6. (a) What is meant by real time operating system? Explain the use RTOS in an embedded system design.
(b) Explain the role of software development tools for microcontrollers with proper illustration.
7. (a) Explain the importance of programmable timers in 16-bit microcontrollers.
(b) Write notes on memory map in intel 80196 family MCU system.
8. (a) Draw and explain, in brief, the organization of ARM 32-bit microcontroller.
(b) Discuss about ARM/Thumb programming model.
