

FACULTY OF INFORMATICS

B.E. IV/IV Year (IT) II Semester (Main) Examination, May/June, 2011

EMBEDDED SYSTEMS

Time : 3 Hours]

[Max. Marks : 75

Answer **all** questions from Part A.
Answer any **five** questions from Part B.

Part A – (Marks : 25)

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| 1. Write the instruction types of 8051. | 3 |
| 2. Define Micro processor, Micro controller and Embedded systems. | 3 |
| 3. Define task, task - states. | 2 |
| 4. Why timers are required ? Give examples. | 2 |
| 5. Write three features of RTOS. | 3 |
| 6. What is Instruction - level parallelism? | 2 |
| 7. Write the functions of Elevator controller. | 2 |
| 8. What are the features of ARM architectures? | 3 |
| 9. Differentiate between Hard-time scheduling and soft - time scheduling. | 3 |
| 10. What is mailbox ? Define. | 2 |

Part B – (Marks : 50)

11. (a) Explain the levels of abstraction in Embedded System design process.
(b) Compare and contrast top-down and bottom-up design.
12. (a) Write an assembly language program to find the addition of two 16-bit numbers.
(b) Explain how Interrupts are serviced in 8051 architecture.
13. (a) What is Interface? Explain the D/A conversion mechanism.
(b) What are the functions of Semaphores.
14. What is Multitasking ? Explain how it is handled in RTOS.
15. (a) Write the 5-stage pipelining mechanism in ARM.
(b) Differentiate between onchip cache and offchip cache.
16. (a) Explain the Register Structure in 8051.
(b) Explain about Conditional and Unconditional Instructions.
17. Write short notes on
 - (a) CAN bus
 - (b) SHARC - Architectures.

