

FACULTY OF ENGINEERING
B.E. 4/4 (CSE) I Sem. (Main) Examination, December 2011
PRINCIPLES AND APPLICATIONS OF EMBEDDED SYSTEMS

Time: 3 Hours]

[Max. Marks: 75

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

PART – A

(25 Marks)

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|--|---|
| 1. What is embedded system ? | 2 |
| 2. List the applications of embedded system. | 3 |
| 3. What are types of jump instructions ? | 2 |
| 4. Illustrate state operation with example. | 3 |
| 5. What is the function of task scheduler ? | 2 |
| 6. How to define reentrant function ? | 3 |
| 7. What are different modes of timer ? | 2 |
| 8. What is tool chaining ? | 3 |
| 9. Write a assembly code segment for ARM processor to find $x = (a + b) - c$. | 3 |
| 10. List the different registers in SHARC processor. | 2 |



PART – B

(50 Marks)

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|---|----|
| 11. a) Explain the process of embedded system design. | 6 |
| b) What are the different types of addressing modes in 8051 microcontroller ? | 4 |
| 12. a) Explain the types of arithmetic operation. | 6 |
| b) Which are the flags affected by arithmetic operation ? | 4 |
| 13. Draw and explain the interfacing of keyboard with micro controller. | 10 |
| 14. a) Explain the function of mail base. | 4 |
| b) Explain about design of tank monitoring system. | 6 |

15. a) Explain instruction level parallelism in advanced architectures. **6**
- b) What are the advantage of network embedded system ? **4**
16. a) Explain the block diagram of microcontroller. **6**
- b) Describe the internal memory organization of 8051 controller. **4**
17. a) Explain about memory management in RTOS. **5**
- b) Explain the functions of ICON register. **5**