Code No. : **3135**

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) I Semester (Main) Examination, December 2010

EMBEDDED SYSTEMS (Elective – I)

Time : 3 Hours] [Max. Marks : 75

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

PART – A (25 Marks)

1. Differentiate between Hard and Soft real-time system. 3
2. How does a Embedded Processor differ from a general purpose processor ? 2
3. Explain TDMI with respect to ARM to Processors. 2
4. List out the logical instructions in ARMFTDMI with an example. 3
5. Distinguish between synchronous and Iso-synchronous communication. 2
6. What are the advantages and disadvantages of interrupt driven data transfer ? 3
7. What is the difference between spin-lock and semaphores ? 2
8. How does a mailbox message differ from a queue message ? 2
9. Why do you need cross compiler ? 3
10. Define following terms : 3

    a) Watchdog Timer b) Multitasking c) RTOS.

PART – B (50 Marks)

11. a) Explain software tools in designing of an Embedded system. 6

b) Briefly explain classifications of Embedded system. 4

12. a) Explain the instruction set for power PC architecture. 6

b) Discuss about advantages and disadvantages of Embedded Programming in 'C'. 4

13. a) Explain about a) I^2C bus b) CAN bus c) USB bus. 7

b) Draw the frame format of HDLC protocol and explain. 3

14. a) Explain RTOS scheduling models in detail. 5

b) Briefly explain the inter process communication. 5

15. a) Discuss about processor selection for an Embedded system design. 6

b) Explain embedded system project management and design issues in development process. 4

16. a) Explain the Hardware and Software features of AVR microcontroller.

b) Discuss about multithreaded programming.

17. Write short notes on :

a) Memory management.

b) Polled waiting loops.

c) Interrupt-driven I/O.