



END SEMESTER EXAMINATIONS May 2012 (R-2008)

Sixth Semester Full Time,

Electrical and Electronics Engineering

EE 9351 EMBEDDED SYSTEM DESIGN

Time: 3 Hours

Max. Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. How are interrupts useful in building embedded system?
2. How are general purpose uPs different from Embedded processors?
3. Give one advantage & Disadvantage between Immediate Addressing vs Indexed Addressing
4. What is real time & real time clock?
5. State one advantage & one disadvantage of the polling technique for data transfer?
6. Justify with one difference on how interrupts are achieved in processors based on watch dog timer & system reset,.
7. What is software-Hardware Partitioning?.
8. How is time slice scheduling important in RTOS?
9. What is a compiler & a cross -compiler?
10. State any 2 limitations of Windows Os compared to other commercial RTOS.

PART – B (5 x 16 = 80 Marks)

11. What is TASK: *spawn, suspension, resumption, delay* ? [4+12]
Explain briefly on multitasking RTOS with involving priority level switching & the co-operative scheduling mechanism.

12(a). Explain any 3 valid reasons for the need of special Bus Protocols for Embedded processors. With neat figures explain on one class of serial communication. [6+10]

(OR)

12(b) Discuss on the features of the USB Bus with discussing the protocol for establishing Communication between systems via USB interface. [6+10]

13(a) How are memory management achieved in processors? What is the need for Cache replacement & memory mapping techniques? [8+8]

(OR)

13(b) Write briefly on any TWO: [8+8]

- (i) Semaphore Types
- (ii) mailbox & message for Interprocess communications
- (iii) Device Drivers

14(a) What is need for co-processing unit? With neat figure explain how CRT controller helps the video signals to be generated for color graphics display in a CRT. [16]

(OR)

14(b) Write briefly on any TWO: [8+8]

- (i) Interrupt Service Routine
- (ii) Need for Interrupt Vector Addressing
- (ii) Instruction pipeline

15a) Discuss on the Design Strategies, the algorithm involved in system automation for the development of any one Embedded Application with quoting a suitable example [16]

(OR)

15b) What is need for (i) Electronic Design Automation (EDA) Tool (ii) Integrated Development Environment (IDE) for Embedded System design & Development. Explain their role in embedded system Design with quoting one typical case example [8+8]