C 3313

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Sixth Semester

Mechatronics Engineering

MH 1001 — EMBEDDED SYSTEM AND DESIGN

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define interrupt latency.

2. Suggest the methods for protecting shared data.

3. Define baud rate.

4. What is the use of UART?

5. What do you mean by interrupt vector?

6. Can parallel input ports be constructed using latches? Justify your answer.

7. What is round robin system?

8. What is the purpose of linkers?

9. What are the functions of semaphores?

10. How does the scheduler know when a task has become blocked or unblocked?

PART B — (5 × 16 = 80 marks)

11. (a) Explain Direct Memory Access in RTOS. (16)

Or

(b) Compare and contrast the different memory technologies as they pertain to RTOS. (16)

12. (a) Explain the architecture and the register set of a typical micro controller. (16)

Or

(b) Write short notes on the following : (8 + 8)

(i) Parallel Slave port

(ii) Analog to digital converter.

13. (a) Explain parallel I/O interface and high speed I/O interfacing techniques. (16)

Or

(b) Explain the concept of frequent measurement in terms of Input capture and output compare in RTOS. (16)

14. (a) (i) Explain the queue scheduling architecture and any one scheduling algorithm. (10)

(ii) Explain any two software-debugging tools used for embedded system design. (6)

Or

(b) (i) Discuss briefly the features of IDE. (10)

(ii) Discuss the useful utilities of simulators. (6)

15. (a) Discuss the semaphore and shared data concepts in terms of RTOS view. (16)

Or

(b) Briefly explain two rules of interrupt routine in RTOS Environment. (16)
