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10EC/TE762

Seventh Semester B.E. Degree Examination, June/July 2016

Real Time Systems

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Define the real time systems. Explain the computer control system of a hot air blower with a neat diagram. (10 Marks)
- b. Define:
 - i) Clock based system,
 - ii) Event based system,
 - iii) Interactive based system. (06 Marks)
- c. Write any four responsibilities of control engineer. (04 Marks)
- 2 a. What do you mean by adaptive control? With a neat diagram, explain any two types of adaptive control. (10 Marks)
- b. Explain the following:
 - i) Supervisory control system,
 - ii) Distributive system. (10 Marks)
- 3 a. Explain parallel computers concepts with SISD, SIMD, MIMD and MISD with its advantages and disadvantages. (10 Marks)
- b. Explain process related interface with suitable example. (10 Marks)
- 4 a. How do strong data typing contribute to the security of programming language? (06 Marks)
- b. Explain the approaches of application oriented software. (08 Marks)
- c. What is cutlass and what are the major requirements of CUTLASS? (06 Marks)

PART – B

- 5 a. With a neat block diagram, explain the typical structure of RTOS. (10 Marks)
- b. What is meant by code sharing? Explain reusable and reentrant code. (07 Marks)
- c. Define: i) Live lock, ii) Dead lock. (03 Marks)
- 6 a. Explain: i) Task chaining and swapping, ii) Task overlaying. (07 Marks)
- b. Explain the task management system with states of tasks. (07 Marks)
- c. Explain scheduling policies. (06 Marks)
- 7 a. Explain the different phases involved in the design of RTS. (10 Marks)
- b. Explain foreground and background system with flow chart. (10 Marks)
- 8 a. Explain Yourdon methodology. (05 Marks)
- b. Explain with relevant diagrams the Ward and Mellor method. (07 Marks)
- c. Write about the environmental model, with context diagram for drying oven. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and or equations written eg. 42+8 = 50, will be treated as malpractice.

