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10MT761

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Real Time Systems

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Define RTS. Explain computer control systems with a suitable example. (10 Marks)
b. Explain hard and soft real time systems with relevant equations. (10 Marks)
- 2 a. Explain the sequence control with an example of simple chemical reactor vessel. Show the block diagram of a typical chemical batch process. (10 Marks)
b. Explain supervisory control with the block diagram and an example of evaporation plant. (10 Marks)
- 3 a. Explain digital signal input and output interfaces. Also write simplified READ timing diagram. (10 Marks)
b. Explain different types of LAN topologies. (10 Marks)
- 4 a. How to declare and initialize the variables and constant? Explain. (10 Marks)
b. Explain the simple table driven approach used for application oriented software. (10 Marks)

PART – B

- 5 a. Mention the basic functions of the task management module. Explain task states with a typical task state diagram. (10 Marks)
b. Explain the work of dispatches using a flow chart. (10 Marks)
- 6 a. Explain the following concepts of memory management
i) Task chaining and swapping
ii) Task overlaying. (10 Marks)
b. Explain mutual exclusion using binary semaphore. (10 Marks)
- 7 a. Explain preliminary design. (10 Marks)
b. Explain single program approach using flow chart. (10 Marks)
- 8 a. Explain with relevant diagrams, the Hatley and Pirbhai method. (10 Marks)
b. Write a short notes on :
i) Centralized computer control
ii) Daisy chain interrupt structure. (10 Marks)

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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.