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15EC743

Seventh Semester B.E. Degree Examination, Jan./Feb.2021 Real Time System

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the following:
 - (i) Clock based task.
 - (ii) Event based task.
 - (iii) Interactive task. (06 Marks)
- b. Define Real Time System. Explain different types of programs in system design. (10 Marks)

OR

- 2 a. Explain supervisory control with example of an evaporation plant. (08 Marks)
- b. Explain loop control with diagram and list advantages of loop control over analog control. (08 Marks)

Module-2

- 3 a. Explain analog input and output interface. (08 Marks)
- b. Explain Daisy chain interrupt structure with block diagrams. (08 Marks)

OR

- 4 a. Explain different uses of interrupt. (08 Marks)
- b. Explain asynchronous and synchronous transmission techniques with diagrams. (08 Marks)

Module-3

- 5 a. Explain in brief, the major requirement for real time languages. (12 Marks)
- b. Define the following with respect to real time programming (i) Global and local variables (04 Marks)
(ii) Scope and visibility.

OR

- 6 a. Discuss standard structure program constructs used in real time programming language. (08 Marks)
- b. Explain different types of data types briefly. (08 Marks)

Module-4

- 7 a. Explain priority structure in brief with diagram. (08 Marks)
- b. List the functions of task management. Explain with diagram, task state diagram and task states. (08 Marks)

OR

- 8 a. Discuss significance of memory management and explain task chaining and task overlaying. (10 Marks)
- b. Explain : (i) Serially reusable code. (06 Marks)
(ii) Re-entrant code.

Module-5

- 9 a. Explain planning phase and development phase involved in design of real time system. (10 Marks)
- b. Describe foreground/background approach with flow chart. (06 Marks)

OR

- 10 a. Write a note on Yourdon methodology. (06 Marks)
- b. Differentiate between Ward and Mellor and Hatley and Pirbhai methodology. (04 Marks)
- c. Explain requirement model with diagram for Hatley and Pirbhai method. (06 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.