CBCS SCHEME

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15MT743

Seventh Semester B.E. Degree Examination, Aug./Sept.2020
Real Time Systems

Time: 3 hrs. Max. Marks: 80

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

Module-1

1 a. Define real time system. Classify real time systems based on time constraints with an example for each and appropriate equations. **(10 Marks)**

b. Explain the types of programs in real-time system design. **(06 Marks)**

OR

2 a. Explain sequence control using chemical reactor vessel as an example. **(08 Marks)**

b. Explain distributed system with a neat diagram and mention the major advantages of this approach. **(08 Marks)**

Module-2

3 a. With a neat schematic diagram, explain general purpose digital computer. **(10 Marks)**

b. Write the different types of parallel computers. Explain any one of them. **(06 Marks)**

OR

4 a. With a neat sketch, explain different LAN topologies. **(10 Marks)**

b. With a neat block diagram, explain interrupt masking. **(06 Marks)**

Module-3

5 a. What are the basic language requirements for real time language? Explain. **(10 Marks)**

b. Discuss about modularity and variables used in real-time languages. **(06 Marks)**

OR

6 a. With an example program, explain interrupts and device handling. **(10 Marks)**

b. Explain run-time support in real-time systems. **(06 Marks)**

Module-4

7 a. What is task management? List the functions of task management. Discuss about different tasks in task state diagram. **(12 Marks)**

b. Write a note on scheduling strategies. **(04 Marks)**

OR

8 a. Discuss significance of memory management and explain task chaining and swapping method. **(12 Marks)**

b. What do you mean by minimum operating system Kernel? List its functions. **(04 Marks)**

Module-5

9 a. Explain single program approach with a neat flow chart. **(10 Marks)**

b. Write a note on preliminary design details of real-time system. **(06 Marks)**

OR

10 a. Write a note on:
(i) Yourdon methodology **(04 Marks)**
(ii) Drying oven-context diagram **(07 Marks)**

b. Differentiate between Ward and Mellor and the Hatley and Phirbhai methodology. **(05 Marks)**

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