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18MT733

Seventh Semester B.E. Degree Examination, Dec.2024/Jan.2025
Real Time Systems

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. Define Real Time System. Classify them on time constraints. **(10 Marks)**
   b. Classify the elements of a computer control system. **(10 Marks)**

OR

2 a. Briefly explain sequence control with neat diagram. **(10 Marks)**
   b. Discuss about the supervisory control with neat block diagram. **(10 Marks)**

Module-2

3 a. Describe about the general purpose digital computer with neat diagram. **(10 Marks)**
   b. Discuss a brief note on single chip micro computers and micro controllers. **(10 Marks)**

OR

4 a. Interpret in details on types of parallel computers. **(10 Marks)**
   b. Explain any three data transfer technique using interrupts. **(10 Marks)**

Module-3

5 a. Write a note on:
   i)   Concurrency
   ii) Real Time Support **(10 Marks)**
   b. What are the basic language requirements for Real Time System language along with basic language features? **(10 Marks)**

OR

6 a. Write a note on:
   i)   Low level facilities
   ii) Co-Routines. **(10 Marks)**
   b. Explain in brief about declaration and initialization of variables and constants. **(10 Marks)**

Module-4

7 a. Define operating system. Explain Real Time Multi-tasking operating system with a neat diagram. **(10 Marks)**
   b. List and explain the two basic scheduling strategies and also explain the priority structures in an RTOS and its 3 priority level. **(10 Marks)**

OR

8 a. Write a short note on memory management and its types. **(10 Marks)**
   b. Explain in detail, the general structure of input/output subsystem in resource control and its commands for RTOS. **(10 Marks)**

Module-5

9   a.   Explain Hately and Pirbhai method with relevant diagram.   (10 Marks)
    b.   Illustrate about environmental and behavioural model using ward and mellor method.
                                                                                     (10 Marks)

OR

10 a.   Explain in brief about the types of preliminary design in Real Time System.   (10 Marks)
    b.   Write a note on planning and development phase used in design of Real Time systems.
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