



CBCS SCHEME

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18MT733

Seventh Semester B.E. Degree Examination, Dec.2023/Jan.2024

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 systems and analyze sequence control using chemical reactor vessel as an example. (10 Marks)
- b. Explain the concept of compute control for supervisory control. (10 Marks)

OR

- 2 a. Explain the classification of real time systems. (06 Marks)
- b. Discuss hard and soft RTS with relevant equations. (07 Marks)
- c. Explain the different types of programs in RTS. (07 Marks)

Module-2

- 3 a. Discuss the different types of parallel computers. (10 Marks)
- b. Describe the analog input system and output system with a neat diagram. (10 Marks)

OR

- 4 a. With a neat block diagram, explain the general purpose digital computer. (10 Marks)
- b. Explain the following data transfer techniques :
 - i) Polling
 - ii) Interrupts. (10 Marks)

Module-3

- 5 a. Discuss about modularity and variables used in real time languages. (10 Marks)
- b. List the various requirements in programming languages used for real time applications. (10 Marks)

OR

- 6 a. With an example code describe the exception handling mechanism in real time language. (10 Marks)
- b. Explain data types and also discuss the different types of data types. (10 Marks)

Module-4

- 7 a. With a neat diagram, explain real time multi tasking and multi user operating system. (10 Marks)
- b. List the functions of task management module. Explain various tasks state with the help of state diagram. (10 Marks)

OR

- 8 a. Explain the following with respect to code sharing :
 - i) Serially reversible code
 - ii) Re – entrant code. (10 Marks)
- b. Describe all 3 priority levels in priority structure with the flow chart. (10 Marks)

Module-5

- 9 a. Describe the following preliminary design concepts.
i) Hardware design (10 Marks)
ii) Software design. (10 Marks)
b. Explain single program approach with a neat flow chart. (10 Marks)
- OR**
- 10 a. Write short notes on Ward and Mellor method. (10 Marks)
b. Explain Hatley and Pirbhai method in RTS development methodology. (10 Marks)
