

# CBCS SCHEME



18MT733

Seventh Semester B.E. Degree Examination, June/July 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. Explain briefly sequential, multi-tasking and real time programs. (10 Marks)
- b. Explain briefly clock based tasks, event based tasks and interactive systems. (10 Marks)

OR

- 2 a. Explain with a neat diagram the procedure of operation of a simple chemical reactor vessel indicating sequence control. (10 Marks)
- b. With a neat diagram, explain the operation of an evaporation plant as an example of supervisory control. (10 Marks)

### Module-2

- 3 a. Explain with a neat diagram a general purpose computer. (10 Marks)
- b. Explain with a neat diagram parallel computer architecture. (10 Marks)

OR

- 4 a. Explain analog input and output system with a neat diagram. (10 Marks)
- b. Explain with a neat diagram pulse input and output interface. (10 Marks)

### Module-3

- 5 a. Explain briefly the purpose of declaration and initialization of variables and constants. (10 Marks)
- b. With suitable examples explain briefly data types and their allocation in real time systems. (10 Marks)

OR

- 6 a. Explain the following with examples:  
i) Exception handling ii) Co-routines. (10 Marks)
- b. What is CUTLASS? Explain briefly CUTLASS in real time systems including major requirement and general features of CUTLASS. (10 Marks)

### Module-4

- 7 a. Explain briefly scheduling strategies in real time systems. (10 Marks)
- b. With relevant diagram, explain memory management in real time systems. (10 Marks)

OR

- 8 a. With neat diagram, explain task management in real time systems. (10 Marks)
- b. Explain Input / Output Sub System (IOSS) with neat diagram. (10 Marks)

### Module-5

- 9 a. With relevant diagram, explain planning phase and development phase in real time systems. (10 Marks)
- b. Explain single program approach with a neat flow chart. (10 Marks)

OR

- 10 a. Explain foreground and background system with a neat flow chart. (10 Marks)
- b. Explain Ward and Mellor method with a neat diagram. (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.