

--	--	--	--	--	--	--	--	--	--

## Seventh Semester B.E. Degree Examination, Feb./Mar. 2022

### 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 the different types of programs in system design. (10 Marks)  
b. What is meant by real time system? Explain the classification of real time system. (10 Marks)

OR

- 2 a. Draw and explain direct digital control. (07 Marks)  
b. Write a note on Hierarchical system. (07 Marks)  
c. Explain dual computer scheme. (06 Marks)

#### Module-2

- 3 a. Explain digital interface for input and output operation with a neat block diagram. (10 Marks)  
b. Define interrupt. Explain the basic interrupt input mechanism with neat diagram and flow chart. (10 Marks)

OR

- 4 a. Explain SIMD and MIMD parallel computers with a neat diagram. (10 Marks)  
b. Explain different LAN topologies and HDLC protocol used for communication. (10 Marks)

#### Module-3

- 5 a. Explain the following :  
i) Security ii) Readability iii) Portability iv) Efficiency (10 Marks)  
b. Explain briefly declaration and initialization of variable and constants. (10 Marks)

OR

- 6 a. What are data types? Explain each one briefly. (10 Marks)  
b. Write a note on control structures used in programming language. (05 Marks)  
c. What is Coroutines? Explain use of Coroutines with an example. (05 Marks)

#### Module-4

- 7 a. Explain the priority levels in real time operating system. (10 Marks)  
b. Explain cyclic and preemptive scheduling strategies. (10 Marks)

OR

- 8 a. Explain : i) Task chaining and swapping ii) Task overlying (06 Marks)  
b. Explain the general structures of Input Output sub system. (08 Marks)  
c. Describe in briefly mutual exclusion with binary semaphore. (06 Marks)

#### Module-5

- 9 a. Explain foreground and background systems with flow chart. (10 Marks)  
b. Explain software design for RTS using software module. (10 Marks)

OR

- 10 a. With a general arrangement of drying oven, explain the Input/output requirements definition for drying oven. (10 Marks)  
b. Explain the outline of abstract modeling approach of Ward and Mellor. (10 Marks)

\* \* \* \* \*