

**REAL TIME SYSTEMS**

Time: 3 hrs

Max. Marks:100

**PART-A**

- 1 a. Define RTS and explain computer control systems, with a suitable diagram.(8M)  
b. Classify the types of Programmes and explain DDC, with a neat diagram.(8M)  
c. Write any four responsibilities of a control engineer.(4M)
  
- 2 a. Explain distributed system, with a neat diagram and mention the features of HCI.(10M)  
b. Explain the following:
  - 1) Supervisory control system
  - 2) Batch process and continuous process. (10M)
  
- 3 a. Mention the features of specialized processors and explain MIMD, with a neat diagram.(8M)  
b. List the various requirements in programming languages used for real time applications.(12M)
  
- 4 a. Explain simple table-driven approach used for application oriented software.(8M)  
b. What are the major requirements for CUTLASS? Explain in detail, with host-target configuration.(12M)

**PART-B**

- 5 a. Explain with a suitable diagram the multi-user and multi-tasking operating systems.(10M)  
b. What are the functions of a task management module? Explain various tasks states, with the help of a state diagram.(10M)
  
- 6 a. Explain with a neat diagram, the general structure of IOSS.(6M)  
b. What is the principal difference between pool and channel?(4M)  
c. Define liveness. List the set of functions and primitives for RTOS.(10M)
  
- 7 a. Explain software design for RTS using software module.(10M)  
b. Explain with a diagram, data sharing using common memory.(6M)  
c. Mention the importance of conditions flag and binary semaphores.(4M)
  
- 8 a. What do you mean by enhancing the model? Explain with a neat diagram, the relationship between real environment and virtual environment.(8M)  
b. Write short notes on any two:
  - 1) PSPECs and CSPECs
  - 2) Software modeling
  - 3) YOUR DON methodology. (12M)

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