

**B. Tech. VII Semester (Back) Examination, Nov-Dec - 2011**

**Information Technology  
7IT6.2 Real Time System  
(Common with 7CS6.3)**

**Time : 3 Hours**

**Maximum Marks : 80**

**Min. Passing Marks : 24**

**Instructions to Candidates:**

*Attempt any five questions selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

**Unit - I**

1. a) Describe Real Time Databases with help of consistencies and consistency models. (4+4)
- b) Explain Digital control with help of example of a digital controller. (4+4)

**OR**

1. a) What are temporal parameters of real - time work load. (8)
- b) Describe Periodic Task Model with all types of tasks associated with it. (8)

**Unit - II**

2. a) Explain challenges in validating timing constraints in priority-driven systems. (8)
- b) Describe optimality of EDF and LST algorithms. (8)

**OR**

2. a) What are commonly used approaches for Scheduling real time systems. (8)
- b) Compare off-line and on-line Scheduling. (8)

### Unit - III

3. a) Describe effects of resource contentions and resource access control (8)
- b) Define and explain Basic Priority inheritance protocol. (8)

OR

3. a) Define and explain Stack-based, Priority-ceiling (Ceiling - Priority) Protocol.(8)
- b) Describe use of Priority - Ceiling protocol in Dynamic - Priority systems. (8)

### Unit - IV

4. a) Explain the concept of End-to-End jobs and tasks. (8)
- b) Describe different architectures for inter-processor communication. (8)

OR

4. a) Explain the tasks of temporal distance constraints. (8)
- b) What is predictability and validation of dynamic multiprocessor systems. (8)

### Unit - V

5. a) Explain architectural overview of Real Time communication model with help of diagram. (4+4)
- b) What are performance objectives and constraints of real time communication model. (8)

OR

5. a) Describe Medium Access-control protocols of broadcast networks. (8)
- b) Explain Internet and Resource reservation protocols. (8)