8E5005

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B.Tech. VIII Semester (Main/Back) Examination - 2013
Computer Science
8CS4.2 Real Time Systems

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) Define Real Time System (RTS). **(4)**
   b) What are the characteristics of R Time System? **(4)**
   c) What are the characteristics of Real Time System control? **(8)**

OR

1. a) Explain with example the various timing constrains. **(8)**
   b) Differentiate, with example, soft & hard RTS. **(8)**

Unit - II

2. a) What are the functional parameters of Job? Explain. **(8)**
   b) Explain briefly : **(8)**
      i) Dynamic v/s static system
      ii) Offline scheduling v/s online scheduling

OR

2. a) Explain weighted round robin approach for RTS. **(8)**
   b) Explain briefly Data Dependency & its type. **(8)**

Unit - III

3. Explain following :
   - a) Priority driven Approach for Real Time Scheduling. (4)
   - b) General structure of cyclic scheduler. (4)
   - c) Rate monotonic (RM) algorithm. (4)
   - d) Advantages of clock driven scheduling. (4)

OR

3. Explain following :
   - a) Fixed Priority v/s Dynamic Priority scheduling. (4)
   - b) Scheduling spordic jobs. (4)
   - c) Deadline monotonic (DM) algorithm. (4)
   - d) Disadvantages of clock driven scheduling. (4)

Unit - IV

4. a) What is a periodic task scheduling? Explain the assumption for a periodic task scheduling. (8)
   b) What is flexible application? Explain. rtuonline.com (8)

OR

4. a) Explain following : (4×2=8)
   - i) Differ server
   - ii) Simple spordic server
   b) Explain scheduling approaches for periodic task. (8)

Unit - V

5. Explain following :
   - a) Basic Priority celling protocol. (4)
   - b) Concurrent access of Data objects. (4)
   - c) Priority inheritance protocol for task execution. (4)
   - d) Priority inversion and how it is related to critical section. (4)

OR

5. a) Differentiate between basic Priority celling protocol & priority inheritance protocol. (8)
   b) Give advantages and disadvantages of priority inheritance protocol. (8)

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