

8E5005

Roll No. _____

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8E5005**B. Tech. VIII Semester (Main/Back) Examination-2014****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) What is real time system? Explain with an example. How it is different from general purpose computer system? (8)
- b) Explain Radar signal processing system in detail? Also explain the process of tracking the signals in Radar. (8)

OR

1. a) What are timing constraints? Explain different types of timing constraints in detail. (8)
- b) Explain Tardiness in brief? Also explain how it affect the soft and hard real time Jobs? (8)

Unit - II

2. a) Explain the following :
 - i) Weighted Round Robin Approach (4+4=8)
 - ii) Precedence of Graph. (8)
- b) What is periodic Task Model? Explain period, Execution time and phase of periodic Tasks. (8)

OR

2. a) Explain off-line and on-line Scheduling and list out main differences between off-line and on-line Scheduling with examples. (8)
- b) Write short notes on :
 - i) Static v/s Dynamic systems
 - ii) Real Time work load v/s Real Time scheduling. (4+4=8)

Unit - III

3. a) Explain clock driven Scheduling with example? (8)
 b) Explain the notations and various assumptions for periodic driven Scheduling. Also explain the various fixed priority Scheduling Algorithm? (8)

OR

3. Write short notes on : (8+8=16)
 i) Scheduling of RM and DM
 ii) General structure of cyclic Scheduling.

Unit - IV

4. Write short Notes on :

- a) Polling server
 b) Deferrable server
 c) Slack stealing
 d) Firm deadline Model.

(4×4=16)

OR

4. Explain the Scheduling of Flexible computations in detail with suitable examples?(16)

Unit - V

5. a) Explain "stack Based priority ceiling protocols" for multiple unit resources with example? (8)
 b) What is 'RAC'? Discuss the effects of resources contention? (8)

OR

5. a) What is priority inversion? How it takes place, explain with an example? Also explain that how it is related to critical section? (8)
 b) Explain basic priority ceiling protocol and priority inheritance protocol in detail? (8)