1E-7905

Total Printed Pages : 2

Roll No. : _

7905

M. Tech. Computer Science & Engg. (Sem. I)
Main/ Back Examination,
January – 2008

Critical System Design

Time : 3 Hours] [Total Marks : 80

[Min. Passing Marks : 27

Attempt any five questions.
Marks of questions are indicated against each question.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. Nil 2. Nil

1 What are performance ciritical systems ? Why performance critical systems are difficult to design and build ? **20**

2 Explain various access control techniques in detail. What are different assumptions on the uses of resources ? **20**

3 (a) What pit-fall to successful performance critical system design are most common and how can we address them ? **10**

(b) What make an operating system a good Real-Time-Operating-System ? **10**

4 Explain waited round-robin approach for time critical system design. How this approach differs from clock drive approach and priority driven approach ? **20**

5 Briefly explain at least two way in which confidential incident reporting systems can be used to support the development of safety critical computer systems. **20**

6 What are different scheduling flexible computations with temporal distance constraints ? Explain in detail. **20**

7 (a) Why does reason's distinction between latent and active failure have important implications for the development of safety critical software ? **15**

(b) What do you understand by clock synchronization ? **5**

8 Give the classification of time-critical systems. Explain the reference model for time-critical systems. **20**