Code No: NR421201 **NR**

IV B.Tech II Semester Supplementary Examinations, Apr/May 2006
REAL TIME SYSTEMS
(Information Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Define Real-Time System
   (b) Discuss with help of a neat sketch the Computer Control System showing communication tasks. [4+12]

2. Discuss process-related interfaces for a Real Time Systems. [16]

3. Explain in detail, the following concepts
   (a) Blocks
   (b) Procedures and Functions
   (c) Packages [4+5+7]

4. (a) List and explain the minimum set of operations that a RTOS kernel should support.
   (b) With the help of diagram, explain the (input/output sub system)IOSS operations for Input of data. [8+8]

5. Discuss whether or not the following are hard, soft real time systems. Justify your answer.
   a. A police database the provides information on stolen automobiles.
   b. An automatic teller machine.
   c. A universitys grade processing system, which takes grade sheets and generates report cards.
   d. A computer controlled routing switch used by a phone company.
   e. An Aircraft controller
   f. Railway reservation system
   g. An oven heat controller system
   h. A Toy controller.

   [8x2-16]

6. (a) Why and how does multitasking approach deployed for the design of Real Time Systems?
   (b) How do you handle the transaction priorities in real time databases? [10+6]

7. (a) Explain the organization of a disk system.
   (b) Why is EDF not always optimal for disk access scheduling? Explain. [8+8]

8. (a) What are the ways to obtain device failure rates? Explain.
   (b) Give brief description about hardware and software reliability models. [6+10]

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