

**B. Tech Degree VIII Semester Examination, April 2008****CS 804 (A) REAL TIME SYSTEMS**  
(2002 Scheme)

Time : 3 Hours

Maximum Marks : 100

- I. (a) Using a block diagram, show the important hardware components of a Real Time System, and their interaction. Explain the role of different components. (10)  
 (b) Illustrate with figures, some areas where real time system is put to use. (10)
- OR**
- II. (a) Define and describe the characteristics of hard, soft and firm real time systems. Give example for each one of them. (10)  
 (b) Discuss the different notations used to document the different stages of development of Real Time Systems. (10)
- III. (a) In what way is ADA a better language for real time software than the general purpose language with which you are most familiar? Discuss. (10)  
 (b) Discuss programming environment and run time support for real time systems. (10)
- OR**
- IV. (a) What is a package? Discuss the benefits from using packages in real time programming environment with a suitable example. (10)  
 (b) Explain the mechanisms used for exception handling in Real Time Systems. (10)
- V. (a) Compare Real Time and General purpose databases. (10)  
 (b) Explain two concurrency control issues in real time database design. (10)
- OR**
- VI. (a) Discuss the merits and demerits of using Main Memory Databases in Real Time applications. (10)  
 (b) Discuss the two ways of maintaining serialization consistency in real time databases. (10)
- VII. (a) Illustrate the working of VTCSMA algorithm with relevant figures. How is the performance of the algorithm? (12)  
 (b) Briefly explain the features of the three most important communication media used in real time communication. (8)
- OR**
- VIII. (a) Explain the working of Stop-and-Go multihop protocol. How does it meet hard deadlines on packet delivery times? (10)  
 (b) Explain fault tolerant routing in real time communication. (10)
- IX. (a) Explain different types of faults and fault detection methods in RTS. (12)  
 (b) Discuss software redundancy. (8)
- OR**
- X. (a) Discuss hardware redundancy. Briefly explain some popular structures for hardware redundancy. (12)  
 (b) Explain Integrated failure handling as a fault tolerance mechanism. (8)

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