

IV B.Tech I Semester Supplementary Examinations, November 2005
REAL TIME SYSTEMS
(Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Explain the following :
 - (a) Loop Control
 - (b) Supervisory Control
 - (c) Direct Digital Control. [5+5+4]
2. Discuss process-related interfaces for a Real Time Systems. [16]
3.
 - (a) Explain the salient features of modula-2.
 - (b) Explain the salient features of Ada. [8+8]
4.
 - (a) What are the major issues of synchronization and communication in Real Time Systems?
 - (b) Explain the two mechanisms for transfer or sharing of data between tasks in RTOS. [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. Define and explain the following:
 - (a) Hardware redundancy
 - (b) Software redundancy

- (c) Time redundancy
- (d) Information redundancy [4+4+4+4]
- 8. (a) What is exponentially - Distributed Fault Latency? Give a sequence of events resulting in triad failure.
- (b) Give an introduction of transient faults. [10+6]
