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**Seventh Semester B.E. Degree Examination, Dec.2013 / Jan. 2014**  
**Real – Time Systems**

Time: 3 hrs.

Max. Marks:100

**Note: 1. Answer any FIVE full questions, selecting atleast TWO question from each part.**  
**2. Standards Notations are used.**

**PART - A**

- 1 a. What is meant by Real – Time systems? Explain the classification of Real - Time systems. (08 Marks)
- b. Explain : i) Sequential program ii) Multitasking program iii) Real – Time program. (06 Marks)
- c. With suitable block diagram, explain the generalized computer control system. (06 Marks)
- 2 a. Explain the batch process and continuous process. (06 Marks)
- b. Explain the supervisory control system, with neat block diagram. (06 Marks)
- c. List the advantages and disadvantages of DDC. (04 Marks)
- d. Write any four responsibilities of a control engineer. (04 Marks)
- 3 a. Explain process related interface, with suitable examples. (08 Marks)
- b. Mention the features of specialized processors and explain MIMD, with a neat diagram. (06 Marks)
- c. Define : i) Asynchronous and Synchronous Transmission Technique ii) Interrupt response vector iii) Polling. (06 Marks)
- 4 a. List the various requirements in programming languages used for real – time applications. (12 Marks)
- b. Explain the approaches of application oriented software. (08 Marks)

**PART - B**

- 5 a. Explain with a suitable diagram, the multi – user and multi – tasking operating systems. (10 Marks)
- b. What are the functions of a task management module? Explain various tasks states, with the help of a state diagram. (10 Marks)
- 6 a. What is code sharing? Explain the serially reusable and reentrant code. (08 Marks)
- b. Explain the mutual exclusion using binary semaphore. (06 Marks)
- c. Explain with a neat diagram, the general structure of IOSS. (06 Marks)
- 7 a. Explain foreground and background systems, with flowchart. (08 Marks)
- b. Explain software design for RTS using software module. (08 Marks)
- c. What is the principal difference between pool and channel? (04 Marks)
- 8 a. Explain with relevant diagrams, the Ward and Meller method. (08 Marks)
- b. Explain Yourdon methodology. (06 Marks)
- c. Write a short note on software modeling. (06 Marks)

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