

IV B.Tech. I Semester Regular Examinations, November -2005
DISTRIBUTED COMPUTER CONTROL SYSTEMS
(Electronics & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the main features of distributed computer controlled system. [8]
(b) Explain the Data highway system. [8]
2. (a) Explain the self-tuning algorithms. [8]
(b) Explain the distributed control architecture. [8]
3. Draw a block diagram of supervisory control systems. Explain the functionality of each block. Also principle of supervisory control systems. [16]
4. (a) Explain the batch control using hierarchical system. [8]
(b) Enumerate the applications, uses and merits of fault detection mechanism. [8]
5. (a) Explain the characteristics of real-time systems. [8]
(b) Explain the multi-tasking approach. [8]
6. (a) Explain the main segments in software design. [8]
(b) Explain ISOPE with example. [8]
7. (a) Explain the reasoning in real-time. [8]
(b) Explain the application of knowledge-based system for process management. [8]
8. Write shorts on the following:
(a) MASCOT. [8]
(b) Task scheduling and dispatching. [8]

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1. (a) With suitable diagrams explain the architecture of computer control systems. [8]
(b) State and explain the adaptive algorithm. [8]
2. (a) Explain the adaptive algorithm with a suitable example. [8]
(b) With a block diagram explain the architecture of distributed computer control. [8]
3. (a) With suitable diagram explain the direct digital control. [8]
(b) Explain the open-loop co-ordinate strategies. [8]
4. (a) Explain the system decomposition. [8]
(b) Explain the double interactive strategies. [8]
5. (a) Explain the characteristics of real-time systems. [8]
(b) Explain the fault detection mechanism. [8]
6. Describe the MASCOT system. How is MASCOT used at a simple level?. Discuss the same with a diagram. [16]
7. With suitable diagrams, explain the principle involved in Knowledge based process management. [16]
8. (a) Discuss the task scheduling and dispatching. [8]
(b) Explain the real time task management. [8]

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1. Draw a generalized block diagram of computer control system. Explain the functionality each of the block. Also explain the hardware and software interface. [16]
2. (a) Explain distributed processing. [8]
(b) Explain the self- tuning algorithm. [8]
3. (a) Explain the on-line hierarchical control. [8]
(b) Discuss the classification of parallel/multi processor system. [8]
4. (a) With help of block diagram explain the model reference adaptive system. [8]
(b) With help of block diagram, explain an integrated systems control. [8]
5. (a) Explain the damage confinement and assessment. [8]
(b) Explain the fault tolerance in mixed hardware software system. [8]
6. (a) Explain the knowledge based process management. [8]
(b) What are the issues involved in distributed control systems? Explain. [8]
7. What is task scheduling? Explain the various types of task scheduling with suitable task management. [16]
8. Write shorts on the following:
 - (a) Reasoning in real time system. [5]
 - (b) Optimization and parameter estimation. [5]
 - (c) MASCOT. [6]

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1. (a) Explain the characteristics of distributed computing system. [8]
(b) What do you understand by “data highway”? Explain the same with block diagram. [8]
2. What are the various types of adaptive control algorithms? Explain them with suitable block diagrams. [16]
3. (a) Explain the concept of optimization and parameter estimation. [8]
(b) Explain the differences between the open-loop and closed-loop coordination strategies. [8]
4. (a) Explain the multilayer hierarchical structure. [8]
(b) With help of block diagram explain the self-tuning adaptive control. [8]
5. (a) Draw a block diagram of general approach to real time software design. Explain the each module in detail. [8]
(b) Explain the fault detection mechanism. [8]
6. (a) What are the different ways of knowledge representations? Explain [8]
(b) Explain the task scheduling and dispatching. [8]
7. (a) Explain the Task co-operation and communications. [8]
(b) Explain the real time task management. [8]
8. Write shorts on the following:
(a) Damage confinement. [5]
(b) MASCOT. [6]
(c) Digital control systems [5]
