

**B. Tech Degree VII Semester (Supplementary) Examination
June 2006**

**CS 704 ADVANCED ARCHITECTURE AND
PARALLEL PROCESSING
(2002 Admissions onwards)**

Time : 3 Hours

Maximum Marks : 100

- I. (a) Distinguish between shared memory multiprocessors and distributed memory multiprocessors. (12)
(b) Draw and explain the operational model of SIMD computers. (8)
OR
- II. (a) What are the techniques for introducing parallelism in sequential machines. (10)
(b) What are the various system attributes to evaluate performance in parallel computers? (10)
- III. (a) What are synchronous and asynchronous models of linear pipelines? (8)
(b) What is a nonlinear pipeline? How do reservation tables help in collision free scheduling? (12)
OR
- IV. (a) Discuss the various mechanism for instruction pipelining. (10)
(b) Describe super scalar pipeline design. (10)
- V. (a) Explain in detail about software tools and environments used for parallel programming. (12)
(b) Discuss array and loop dependence analysis. (8)
OR
- VI. Illustrate with examples *any four* program transformation techniques used to avoid dependencies. (20)
- VII. (a) Explain briefly *any two* shared memory programming techniques. (10)
(b) Describe thread management concepts in JAVA. (10)
OR
- VIII. (a) Explain the message passing program development. (10)
(b) Explain the functional architecture of a PVM. (10)
- IX. (a) Explain the model for designing parallel algorithms. (10)
(b) Discuss the features of distributed databases. (10)
OR
- X. (a) Describe the debugging methods for parallel programs. (10)
(b) Discuss the features of distributed operating systems. (10)

