

***B. Tech Degree VIII Semester (Supplementary)
Examination, September 2006***

**CS 801 ADVANCED ARCHITECTURE AND
PARALLEL PROCESSING**

(Prior to 2002 Admissions)

Time : 3 Hours

Maximum Marks : 100

- I. (a) With neat block diagrams explain Flynn's classification of computer architecture. (10)
(b) Explain *any three* static multiprocessor interconnect networks. (10)
OR
- II. (a) Explain about the three shared memory multiprocessor models. (15)
(b) Write notes on parallel random access machine (PRAM) models and its variants. (5)
- III. (a) Explain about synchronous and asynchronous linear pipeline processors. (10)
(b) Write notes on pipeline throughput and pipeline efficiency. (10)
OR
- IV. (a) Explain about the following instruction pipeline mechanisms : (15)
(i) Prefetch buffers
(ii) Multiple functional units
(iii) Internal data forwarding.
(b) Explain about branch prediction in instruction pipelining. (5)
- V. (a) What is parallel programming model? Explain different parallel programming models. (12)
(b) What is meant by data dependence? Explain various types of data dependencies. (8)
OR
- VI. (a) Explain subscript separability and subscript partitioning. (10)
(b) Explain different classification of operating systems for parallel processing. (10)
- VII. (a) Explain different methods for the implementation of threads in Java. (10)
(b) Explain the wired Barrier Synchronization mechanism. (10)
OR
- VIII. (a) Explain the working of multithreaded processor model with a neat block diagram. (12)
(b) Explain the architecture of PVM. (8)
- IX. (a) Write notes on : (10)
(i) Distributed Operating Systems
(ii) Distributed DBMS.
(b) Explain various debugging techniques used in parallel programming. (10)
OR
- X. (a) Explain the parallel reduction algorithm and its time and space complexity analysis. (12)
(b) Explain the concept of distributed shared memory in distributed operating systems. (8)

