

IV B.Tech I Semester Supplementary Examinations, April/May 2005
ADVANCED COMPUTER ARCHITECTURE
(Common to Computer Science & Engineering, Information Technology
and Electronics & Computer Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Give an overview of applications of parallel processing. Justify the need for parallel processing in each case.
(b) What is meant by hierarchical memory structure in parallel processing systems? What are the objectives in designing such a system? Describe the chief characteristics of the hierarchical memory system.
2. (a) What is Internal Forwarding? Explain different techniques.
(b) Explain different data dependant hazards and how these hazards have to be handled so for effective Processing.
3. Give an example that shows how indexing can be used to address the local memories in parallel at different local addresses for routing purpose. Describe SIMD organizations and explain their operation
4. Write an algorithm that performs an SIMD matrix multiplication with a time complexity of order $O(n^2)$, Give its memory allocation of the algorithm.
5. Explain about Tightly coupled multiprocessor with and without private cache memory.
6. (a) Describe multicache problems? Describe methods to solve these problems.
(b) Describe a methodology to evaluate different multiprocessor memory configurations.
7. (a) Compare data driven and dependence driven computing models.
(b) Explain the multilevel program abstraction in the event driven data flow computing model.
8. (a) Give architecture of the front-end system interface with Cray-1 memory and functions sections.
(b) Briefly explain the architecture of Cyber-205.
