

IV B.Tech I Semester Regular Examinations, November 2005
ADVANCED COMPUTER ARCHITECTURE
(Electronics & Communication Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Describe memory interleaving methods and give their applications.
(b) Explain the concept of virtual memory . What are the advantages of such a memory management. [8+8]
2. (a) Give the different classifications of pipeline processors.
(b) Describe the typical pipeline structure of a CPU [8+8]
3. (a) Explain the conceptual view of a single stage interconnection network and a switch.
(b) Give basic organization of Illiac- IV array processor. Explain the its operation . [8+8]
4. (a) Describe Batcher's Odd Even merge of two sorted sequences on a linear array of $PE's$ using an example.
(b) Give the schematic logic design of a typical memory cell in an associative memory [8+8]
5. (a) Compare and contrast differences between tightly coupled and loosely coupled multiprocessor systems. Give their Architectural models.
(b) Explain about process recoverability and context switching in multiprocessor system. [10+6]
6. (a) List the major characteristics, advantages and shortcomings of three types of multiprocessor operating systems.
(b) List the four main sources of performance degradation of the dynamic coherence check algorithm. [10+4]
7. (a) Explain the organization of a ring structured data flow computer.
(b) Construct and explain the data flow graph for the function $z = x^n$ [8+8]
8. (a) Give the Inter CPU Communication structure of Cray X-MP System.
(b) Describe the functions of solid state storage device of the I/O Sub system of a Cray X-MP. [8+8]
