Code No: NR410505

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IV B.Tech I Semester Supplementary Examinations, November 2006
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
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1. What is meant by parallelism in uniprocessor systems? Identify the various mechanisms that have been developed for this purpose and describe them. [16]

2. (a) What is vector processing? Explain the important characters of vector processing.

   (b) Explain different fields of a vector Instructions. [16]

3. (a) Construct of mesh connected an ILLiac-IV Network with N = 16 PE's. What is its equivalent chordal ring topology.

   (b) List down the various routing functions that characterizes Illiac −IV Network. [8+8]

4. (a) Describe Merge - Sorting in M(4,4) sorting algorithm using an example.

   (b) Explain the advantages of using shuffle interconnection for the implementation of the polynomial evaluation algorithm, as compared with the use of the Illiac mesh network for the same purpose. [8+8]

5. (a) List the several factors that affect the characteristics and performance of a bus.

   (b) Explain the different Bus arbitration algorithms. [4+12]

6. (a) Describe performance of parallel algorithms in multiprocessor systems.

   (b) Distinguish between synchronous and asynchronous parallel algorithms. [8+8]

7. (a) Explain briefly, the architecture of the Irvine data flow computer.

   (b) Explain the concept of grouping instruction cells into cellblocks. [8+8]

8. (a) Demonstrate the effect of different synchronization mechanisms on the performance of C.mmp.

   (b) Describe the functional structure of a computer module in the C.mmp. [8+8]

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