

Code No: NR410505

NR

Set No. 2

IV B.Tech I Semester Examinations, November 2010

ADVANCED COMPUTER ARCHITECTURE

Common to Information Technology, Electronics And Computer  
Engineering, Computer Science And Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. (a) Explain the  $C_m^*$  architecture for a hierarchical loosely coupled system and explain the steps involved in an intracuster memory access.  
(b) List the advantages and disadvantages of asymmetric and symmetric I/O systems in a multiprocessor system. [12+4]
2. (a) Discuss about a simple queuing structure with a single processor having inter arrival time and service times.  
(b) Discuss in detail the performance of M/M/n queuing structure. [8+8]
3. (a) What are the routing functions used by shuffle exchange network? Compare with shifter.  
(b) Explain the action of Perfect and Inverse Perfect shuffle for  $N = 8$   
(c) What is the difference between Omega and repositioned Omega network and how repositioning network is advantages? [4+8+4]
4. (a) When processes are said to be concurrent? Explain briefly Conway's fork-join concept.  
(b) Explain briefly reusable, consumable and virtual resources. [10+6]
5. (a) Discuss the steps involved in  $M(j,2)$  sorting algorithm.  
(b) Describe Bit parallel Associative memory organization with suitable diagram. [8+8]
6. (a) How Instruction Prefetch and Branch handling. Improves pipeline performance. Explain.  
(b) Describe Data Buffering and Busing Structures, technique. Describe their importance. [8+8]
7. (a) What are the short coming of data flow computing.  
(b) Discuss in detail about the architecture of Arvind's data flow machine. [8+8]
8. (a) Compare control flow computers and Dataflow computers.  
(b) Explain the computer classification based on the following:  
i. SISD

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- ii. SIMD
- iii. MISD
- iv. MIMD.

[8+8]

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FIRSTRANKER

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Set No. 4

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  - i. SISD
  - ii. SIMD
  - iii. MISD
  - iv. MIMD. [8+8]
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(b) Explain the action of Perfect and Inverse Perfect shuffle for  $N = 8$

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- (c) What is the difference between Omega and repositioned Omega network and how repositioning network is advantages? [4+8+4]

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- (b) List the advantages and disadvantages of asymmetric and symmetric I /O systems in a multiprocessor system. [12+4]

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8. (a) Compare control flow computers and Dataflow computers.  
(b) Explain the computer classification based on the following:  
i. SISD

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- ii. SIMD
- iii. MISD
- iv. MIMD.

[8+8]

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