Total No. of Questions :10] *[Total No. of Printed Pages :2*

 Roll No .....

CS - 605

B.E. VI Semester

Examination, June 2014

Advance Computer Architecture

Time : Three Hours

Maximum Marks : 70

Note: Attempt one question from each unit. All questions carry equal marks. Assume data/value if required.

Unit - I

1. a) Compare control-flow, data flow, and reduction computers in terms of the program flow mechanism used. 7
   b) Explain the following : 7
      i) Computational granularity
      ii) Communication latency

OR

2. a) Comment on the advantages and disadvantages in control complexity, potential for parallelism and cost effectiveness of the above computer models. 7
   b) Write short note on multistage and combining networks. 7

Unit - II

3. a) Distinguish between scalar RISC and super scalar RISC in terms of instruction issue, pipeline architecture and processor performance. 7
   b) Explain the temporal locality, spatial locality, and sequential locality associated with program/data access in a memory hierarchy. 7

OR

4. a) Explain about addressing and timing protocol. 7
   b) What do you understand by coherence? Explain briefly. 7

Unit - III

5. Consider the five-stage pipelined processor specified by the following reservation table. 14

	1	2	3	4	5	6
S1	×					×
S2		×			×	
S3			×			
S4				×		
S5		×				×

   a) List the set of forbidden latencies and the collision vector.
   b) What is the Minimum Average Latency (MAL) of this pipeline.
   c) Draw a state transition diagram.

OR

6. a) Explain possible data hazards with its resolving techniques. 7
   b) Discuss the difference between tomasulo's approach and using scoreboard techniques of dynamic scheduling. 7

Unit - IV

7. a) Describe about vector super computer architecture. 7
   b) Explain about distributed memory model. 7

OR

8. a) What is the use of snoopy protocol? Explain. 7
   b) Write principles of multithreading. Also writes multi threading Issues. 7

Unit - V

9. a) Discuss about parallel languages. Also writes its features. 7
   b) Explain object oriented model. 7

OR

10. a) Write short note on message passing programming model. 7
    b) Write features of parallel programming environment. 7

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