

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

[2]

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 write multi threading Issues. 7

Unit - V

9. a) Discuss about parallel languages. Also write its features. 7
 - b) Explain object oriented model. 7
10. a) Write short note on message passing programming model. 7
 - b) Write features of parallel programming environment. 7