Roll No .....

CS - 605

B.E. VI Semester

Examination, June 2015

Advance Computer Architecture

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What is Instruction level parallelism.
   b) What is the use of branch - target buffer.
   c) What is grain packing, coarse grain and fine grain.
   d) Explain three parallel architecture models and compare their merits and demerits.

OR

Explain the static and dynamic interconnection networks.

Unit - II

2. a) What is memory interleaving?
   b) What are the limitations of VLIW?
   c) Explain locality of reference and memory hierarchy?
   d) What is RISC attributes and discuss the advantages of RISC in comparison with other architecture.

OR

Explain addressing and timing protocols briefly.

Unit - III

3. a) What is Forbidden latency?
   b) Differentiate between Linear pipeline processor and non - linear pipeline processor.
   c) Explain branch handling techniques.
   d) Find the following for the given reservation table.
      i) Forbidden latency ii) Greedy cycle
      iii) State transition diagram iv) MAL

	1	2	3	4	5	6	7	8
S_1	×					×		×
S_2		×		×				
S_3			×		×		×	

OR

Explain how to overcome data hazards with dynamic scheduling using Tomasulo's approach.

Unit - IV

4. a) What is Multi-threading.
   b) What is shared memory model.
   c) Explain vector memory access schemes.
   d) What is meant by each coherence problems? Describe various protocols for cache coherence.

OR

Describe the vector super computer architecture with neat diagram.

Unit - V

5. a) What CRCW and CREW?
   b) Give an example of parallel languages.
   c) What is functional and logic models.
   d) Discuss the advantages of various models?

OR

Explain shared variable model and message passing model.

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