Roll No .....

MCIT-203

M.E./M.Tech., II Semester

Examination, June 2013

Advance Computer Architecture

Time : Three Hours

Maximum Marks : 70

Note: Attempt any five questions. All questions carry equal marks. Assume Data/valve if required?

1. a) Discuss different approaches to parallel programming.
   b) Define parallel computing. What are the fundamental issues in parallel processing? Why parallel computing is required? Discuss various applications of parallel computing.

2. Distinguish between:
   i) Static and dynamic connection networks
   ii) Mesh and torus.

3. Consider a binary integer multiply pipeline with five stages. If the stage delays are $z_1 = z_2 - z_3$ $z_4 -$ gons $z_5 -$ zons and the latch delay is zons then
   a) Determine the maximal clock rate of the pipe line.
   b) What is the maximal throughput of this pipeline in terms of the number of 36-bit results generated per second?

7 A

4. The following overlayed reservation table corresponds to a two-function pipeline:

	1	2	3	4	5
S_1	A	B		A	B
S_2		A		B	A
S_3	B		AB		

   a) List all four cross forbidden lists of latencies and corresponding cross collision. Matrices.
   b) Draw the state diagram for the two-functional pipeline.

5. a) Explain possible data hazards with its resolving techniques.
   b) Discuss the superscalar and superpipelined processing. Also estimate the performance of super pipelined super scalar processor of degree (m,n).

6. Differentiate between:
   a) Neural Vs associative processing
   b) Scalar Vs vector processing.

7. How many type of parallel programming models? Explain each of them briefly.

8. Write short note on :
   i) Away processor
   ii) Feng classification.

7 B

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