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Roll No.....

MCSE-103**M.E./M.Tech. I Semester**

Examination, December 2017

Advanced Computer Architecture**Time : Three Hours****Maximum Marks : 70****Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Explain a synchronous pipeline model with appropriate diagram.
b) Explain delayed branch scheme to reduce pipeline branch penalties.
2. a) Explain the pipeline execution of the following instructions with the following instructions:
i) $X = Y + Z$
ii) $A = B + C$
b) Define parallel computing. What are the fundamental issues in parallel processing? Why parallel computing is required? Discuss various applications of parallel computing.
3. a) What is hazards? Explain Control hazards with examples.
b) Discuss about Tomasulo's algorithm to overcome data hazard using dynamic scheduling?
4. a) Explain SIMD multiprocessors architecture in detail.
b) List pipeline hazards. Explain any one in detail.

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5. a) Explain the bus system at board level, backplane level and I/O level.
b) Describe the schematic design of a cross point switches in a crossbar network.
6. Distinguish between:
i) Static and dynamic connection networks.
ii) Mesh and torus.
7. How many types of parallel programming models? Explain each of them briefly.
8. a) Define load balancing? Explain task costs problem in load balancing.
b) What is self scheduling? Explain variations on self-scheduling.
