

Code No: C0509

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. TECH I SEMESTER EXAMINATIONS APRIL/MAY-2012
ADVANCED COMPUTER ARCHITECTURE
(COMPUTER SCIENCE)**

Time: 3hours**Max.Marks:60**

**Answer any five questions
All questions carry equal marks**

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- 1.a) How to measure system performance? Explain with example.
- b) Briefly discuss quantitative principles of computer design.

- 2.a) Explain data addressing modes used in recent computers.
- b) Describe packing and unpacking operations of decimals.

3. Describe the issue of pipeline hazards. Why do they cause performance problems? How can they be dealt with?

- 4.a) Discuss the basic cache optimizations for improving cache performance.
- b) Describe the pros and cons of paged addressing.

- 5.a) Explain basic pipeline scheduling and loop unrolling.
- b) Discuss Tomasulo's algorithm.

- 6.a) Describe correlating branch predictors with illustrations.
- b) How to exploit ILP using dynamic scheduling?

- 7.a) Give the basic architecture of a distributed-memory multiprocessor.
- b) Explain hardware primitives required to implement synchronization.

- 8.a) What is a cluster? Discuss its designing process.
- b) Explain instruction level parallelism in mobile markets.

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