R09

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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