**Roll No** .....

# CS - 605

## B.E. VI Semester

Examination, December 2012

## Advance Computer Architecture

***Time : Three Hours***

***Maximum Marks : 100*** ***Minimum Pass Marks :35***

***Note:*** *Attempt all Five questions as per directives given.*

1. (a) Explain Flynn's classification based on multiplicity of instruction stream and data stream.
   (b) Differentiate between multiprocessors & multicomputers. Also discuss different shared memory multiprocessor models.

OR

2. (a) Explain different levels of parallelism in program execution.
   (b) Explain different static interconnection networks in the SIMD computers.

3. (a) Differentiate between RISC & CISC architectures.
   (b) What do you understand by term locality of reference? Also explain temporal, spatial & sequential locality.

OR

4. (a) Explain the terms Hit ratio, Access frequency, Memory bandwidth, memory coherence.
   (b) Discuss different addressing and timing protocols of system bus.

5. (a) Discuss linear pipeline processor along with its different models.
   (b) Prove that a k-stage linear pipeline can be at most k-times faster than that of non-pipelined serial processor.

OR

6. (a) Explain the terms Reservation table, Latency, Collision vectors, Greedy cycles.
   (b) What are the major difficulties that cause the instruction pipeline to deviate from Its normal operation and how they could be overcome?

7. (a) Explain the various situations to cause cache inconsistencies.
   (b) Discuss different message routing schemes.

OR

8. (a) Discuss various situations causing deadlock. How virtual channels can be used for deadlock avoidance?
   (b) Differentiate between distributed and shared memory models.

9. (a) Explain the terms Shared variable communication, Critical section Multithreading, Protected access.
   (b) Explain the concept of Inter-processor synchronization.

OR

10. (a) Discuss the concepts of Concurrent OOP and Parallelism in COOP
   (b) Discuss synchronous and asynchronous message passing models.

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