MCSE - 103
M.E./M.Tech., I Semester
Examination, December 2014
Advanced Computer Architecture
Time : Three Hours
Maximum Marks : 70
Note: Attempt any five questions. All questions carry equal marks. Assume Data/Value if required.

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

   b) Explain Architectural classification schemes with their Advantages and disadvantages.

2. a) Distinguish between Array and pipeline computers. 7

b) Explain about multistage connection networks.   7

3. a) Explain the structures and operational requirements of the instruction pipelines used in CISC, scalar RISC. 7

   b) Explain how set Associative cache combines the ideas of direct and fully Associative cache?   7

4. a) Differentiate between Arithmetic and Instruction pipeline.   7
      by Explain possible data hazards with its resolving   techniques.
         7
5. a) Define the following.
                   i) Forbidden   ii) Collision vector
                   iii) Simple cycles   iv) Greedy cycles
                   V) Cross collision vectors.   7
b) Discuss the vectorizing paradigm along with its elements. 7

6. a) What do you mean by cache coherence problem? How it can be solved in multiprocessor system?7
   b) Describe shared-variable programming model. 7

7. a) Explain Branch Handling techniques in pipelining.   7
   b) Write the features of parallel languages. Name the software tools which support parallelism.   7

8. Write short note on   14
    i)   Multiprocessing control
    ii) VLIW
    iii) Load balancing
    iv) Hardware parallelism.