M.Tech (CSE) 2nd Semester Examination
June 2013
Subject – Advanced Computer Architecture
Subject Code – CSL-502

Time Allowed: 03 hours. Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Attempt any five questions and all questions carry equal marks.

1 a) Explain all the mechanism to introduce parallelism in uniprocessor computers.
   b) Explain the concept of virtual memory with address translation using page map

2 a) How will you multiply two 6-bit numbers using arithmetic pipeline.
   b) Explain the effect of branching on the performance of designing pipeline processors.

3 a) Make a block diagram of Star-100 vector processor.
   b) A program takes 500 msec. for execution on a non-pipelined processor. Suppose we need to run 100 programs of same type on a five stage pipelined processor with a clock period of 20 msec. what is the speed-up ratio of the pipeline.

4 a) Explain matrix multiplication on SIMD architecture.
   b) What are various static and dynamic network topologies used in SIMD networks

5 a) Differentiate loosely coupled microprocessor and tightly coupled microprocessor.
   b) How to handle data inconsistency in multiprocessor system?

6 a) What is the use of semaphores in multiprocessing?
   b) Differentiate between Synchronous and Asynchronous algorithms