| BICS-022 |

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

June, 2015

00589

BICS-022 : COMPUTER ARCHITECTURE

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any **seven** questions.*

1. (a)   Discuss   the difference between tightly coupled multi-processor and loosely coupled multi-processor.   5

    (b)   How many switch points are there in a cross-bar switch network that connects p processors to m memory modules ?   5

2. Explain the pipeline scheduling in detail.   10

3. Explain the following :   10

    (a)   SISD

    (b)   SIMD

    (c)   MISD

    (d)   MIMD

4. Draw and discuss the pipelined execution of tasks in a superscalar and VLIW processor. Make necessary assumptions of your choice.   10

5. (a) Discuss the utility of RISC and CISC Architecture by comparing their various features. *5*

   (b) What is hit ratio ? Discuss any method to reduce cache misses. *5*

6. Discuss the relative merits and demerits of various laws for measuring speed-up performance of parallel computer systems. *10*

7. (a) Why is the data transfer slow in RAID level scheme ? *5*

   (b) Explain the daisy chain method used in bus arbitration. *5*

8. Explain the following with respect to Memory Multi-processors : *3+3+4*
   (a) UMA Model
   (b) NUMA Model
   (c) COMA Model

9. Explain the concept of overlapping register window in the SPARC architecture, with the help of a diagram. *10*

10. Write short notes on any *two* of the following : *2×5=10*
    (a) Dynamic Scheduling
    (b) Multicore Processors
    (c) Memory Addressing