5E 5101

B. Tech. V Semester (Main/Back) Examination, Dec., 2014

COMPUTER SCIENCE & ENGINEERING 5CS0A

COMPUTER ARCHITECTURE

(Common for Computer & IT

Time : 3 Hours

Min. Passing Marks : 24

Maximum Marks : 80

Instruction to Candidates :

Attempt any *five* questions, selecting *one* question from *each unit*. All questions carry *equal marks*. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit-I

1. (a) Explain Flynn classification of computer architecture based on streams. [8]

   (b) Write 3 different types of shift micro-operations in Register Transfer Language. [8]

OR

1. (a) Explain bus transfer micro operation. Write it in Register Transfer Language. [8]

   (b) Explain the concept of Von-Neuman Architecture. [8]

Unit-II

2. (a) Design a 4 bit ALU. [8]

   (b) Draw reservation table for 10 instructions. Also explain the instruction pipeline stages. [8]

OR

2. (a) Explain speedup, efficiency and throughout in pipelining. [8]

   (b) Is the there any difference in RISC & CISC architecture? Explain. [8]

Unit-III

3. (a) Multiply 10101 & 11011 using Booth multiplier algorithm. Show the steps. [8]

   (b) Describe the working of Carry Save Adder. [8]

OR

3. (a) Divide 0100100001 by 11001 using restoring division algorithms. Show the steps. [8]

   (b) How will you subtract 2 floating point numbers? Explain with an example. [8]

Unit-IV

4. Design a 16 by 4 RAM Explain binary cell also. [16]

OR

4. Write short notes on any two :

   (a) Associative memory

   (b) Segmentation

   (c) LRU page replacement policy. [8×2=16]

Unit-V

5. (a) What are the various modes of data transfer to and from the computers system? Explain [8]

   (b) Explain the I/O interface for a pen drive. [8]

OR

5. Write short notes on any two :

   (a) Input Output Processor

   (b) DMA

   (C) Priority Intercept. [8×2=16]