322414(22)

B. E. (Fourth Semester) Examination, Nov.-Dec. 2015

(Old Scheme)

(CSE Branch)

COMPUTER SYSTEMS ARCHITECTURE

Time Allowed : Three hours

Maximum Marks : 80

Minimnum Pass Marks : 28

Note : *All questions are compulsory. Part (a) of all questions is compulsory. Attempt any* **two** *parts from (b), (c), (d).*

1. (a) What is processor? 2

(b) Explain the internal elements of CPU. 7

(c) Explain fixed and flocating point representations. 7

(d) Evaluate the arithmetic statement :

$$X = (A + B) * (C + D)$$

using three address instructions and two address instructions.

2. (a) Define overflow and underflow. 2

(b) Describe booth algorithm for multiplication of signed 2' complement numbers. 7

(c) Explain the multiplication of floating point numbers with the help of flow chart. 7

(d) What is difference between combination ALV and sequential ALV? 7

3. (a) Define microprogram and micro-operation. 2

(b) Differentiate harwired control and micro profromed control. 7

(c) Describe CPU control unit. 7

(d) Explain the six stage at instruction pipeline. 7

4. (a) Write the advantages of cache memory. 2

(b) Explain memory hierarchy in a computer system with suitable figure. 7

(c) Illustrate one-dimensional (1-D) RAM organisation. 7

(d) Explain the associative and direct mapping. 7

5. (a) Differentiate multiprocessing and multitasking. 2

(b) Draw the block diagram of DMA controller and explain. 7

(c) Describe how parallelism can be achieved at processor level. 7

(d) What are interrupt? How are they classified? Explain. 7