

Nov - Dec - 2010  
S.E. ~~IT~~ IT  
Sem - I

Total No. of Questions—12]

[Total No. of Printed Pages—4

**[3862]-221**

**S.E. (IT) (First Semester) EXAMINATION, 2010**

**COMPUTER ORGANIZATION**

**(2008 COURSE)**

**Time : Three Hours**

**Maximum Marks : 100**

**N.B. :—** (i) Answer *three* questions from Section I and *three* questions from Section II

(ii) Answers to the two sections should be written in separate answer- books.

(iii) Neat diagrams must be drawn wherever necessary.

(iv) Figures to the right indicate full marks.

(v) Assume suitable data, if necessary.

### **SECTION I**

1. (a) Explain Booth's Algorithm to multiply the following pair of two's signed complements numbers : [10]

A = 110011 (Multiplicand)

B = 101100 (Multiplier).

(b) Explain floating point multiplication with the help of flow chart as well as algorithm. [8]

*Or*

2. (a) Perform the following division using restoring division algorithm : [8]

Dividend = 1001

Divisor = 0101.

(b) Explain IEEE floating point formats. [5]

(c) Explain the flow chart for floating point addition. [5]

3. (a) Draw and explain architecture of 8086. [8]

(b) Draw and explain read cycle of 8086 with a neat diagram. [8]

Or

4. (a) State the factors in the design of instruction format. Draw instruction format for intel processors and explain various fields in it. [8]

(b) State and explain any 4 addressing modes with examples for INTEL processors. [8]

5. (a) Write the control sequence for the following instruction : [8]  
MOV (R3), R1.

(b) Draw and explain micro-programmed control unit. [8]

Or

6. (a) Write a micro-program of micro-instructions for the following instruction : [8]

ADD (R3), R1.

(b) Compare the following : [8]

(i) Hardwired and micro-programmed control unit

(ii) Horizontal and Vertical micro-Instruction format.

## SECTION II

7. (a) Explain Set-Associative mapping technique with example. [8]  
(b) A block Set-Associative mapped cache consists of 64 blocks divided into 4 block sets. The main memory contains 4096 blocks, each consisting of 128 words of 16-bits length : [10]  
(i) How many bits are there in main memory ?  
(ii) How many bits are there in TAG, BLOCK and WORD fields ?

Or

8. Write short notes on (any four) : [18]  
(i) EEPROM  
(ii) RAID  
(iii) SDRAM  
(iv) DVD  
(v) Magnetic Disk  
(vi) Optical Disk.

9. Explain techniques for performing IO and compare them. [16]

Or

10. (a) Explain PCI bus with a neat diagram. [6]  
(b) Explain functions and features of 8255 and 8251. [10]

11. (a) Compare closely coupled and loosely coupled Multiprocessor configurations. Explain loosely coupled multiprocessor configuration. [10]

(b) Explain instruction level pipelining with a diagram. [6]

Or

12. Write short notes on the following (any *four*) : [16]

(i) NUMA

(ii) UMA

(iii) RISC

(iv) CISC

(v) Cluster

(vi) Superscalar Architecture.