

Total No. of Questions—8]

[Total No. of Printed Pages—3

Seat No.	
-------------	--

**[4657]-581**

**S.E. (I.T.) (First Semester) EXAMINATION, 2014**

**COMPUTER ORGANIZATION**

**(2012 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

**N.B. :—** (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,  
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

1. (a) Compare IEEE single precision and double precision formats  
and represent  $(-16.75)_{10}$  in single precision format. [6]

(b) Explain with examples the following addressing modes  
of 8086 : [6]

(i) Register addressing

(ii) Immediate addressing

(iii) Base Index with displacement addressing.

P.T.O.

*Or*

- 2.** (a) Multiply the following signed 2's complement numbers using Booth's algorithm. [6]  
Multiplicand—10011                      Multiplier—10101
- (b) Write a note on MAX/MIN mode of microprocessor 8086. [6]
- 3.** (a) Draw and explain programmer's model of microprocessor 8086. [6]
- (b) Draw and explain single bus organization of CPU. What are its advantages over multiple bus organization ? [7]

*Or*

- 4.** (a) Explain with suitable examples following instructions of 8086 :  
(i) ADD  
(ii) MUL  
(iii) ROL. [6]
- (b) Explain with suitable block diagram design of CPU using hard-wired control method. [7]
- 5.** (a) Compare direct, set associative and fully associative cache memory mapping techniques. [6]
- (b) What is virtual memory ? Explain virtual to physical address translation. [6]

*Or*

**6.** Write short notes on (any *two*) : [12]

(a) EEPROM

(b) RAID

(c) SDRAM.

**7.** (a) Explain the techniques for performing IO in brief. [6]

(b) State and explain in brief the use of registers of DMA controller 8237. [7]

*Or*

**8.** (a) Explain the functions and features of 8255 and 8251. [6]

(b) Explain PCI bus with a neat diagram. [7]