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]