Total No. of Questions—8]　　　　　[Total No. of Printed Pages—2

Seat No.	

[4857]-1082

S.E. (I.T.) (First Semester) EXAMINATION, 2015

COMPUTER ORGANIZATION

(2012 PATTERN)

Time : Two Hours　　　　　　　　　　Maximum Marks : 50

N.B. :— (*i*) Neat diagrams must be drawn wherever necessary.

　　　(*ii*) Figures to the right indicate full marks.

　　　(*iii*) Assume suitable data, if necessary.

1. (*a*) Multiply the following signed numbers using Booth's Algorithm. [6]

Multiplicand : $(14)_{10}$

Multiplier : $(-10)_{10}$

 (*b*) Differentiate the minimum and maximum mode operation of microprocessor 8086. [6]

Or

2. (*a*) Apply restoring algorithm on Dividend : 1001 and Divisor : 11. [6]

 (*b*) Describe instruction types on the basis of its operation and number of addresses used with suitable example. [6]

3. (*a*) Enlist various features of 8086 and explain how the instruction pre-fetch queue is helpful in improving its performance. [7]

 (*b*) Define the term "Microprogramming" and compare Horizontal Microprogramming with Vertical Microprogramming. [6]

Or

4. (*a*) Write fetch sequence of program execution and explain it in detail. [6]

(*b*) Draw and explain the register organization of microprocessor 8086. [7]

5. (*a*) Which are the characteristics of memory system ? Draw DRAM cell and explain its read and write operation in detail. [7]

(*b*) Comment on "Need of Paging" and explain Virtual to Physical address translation using Paging mechanism. [6]

Or

6. (*a*) Explain the role of cache in memory organization. Describe any Cache replacement algorithm in short. [7]

(*b*) Write note on optical memory options : DVD and CDROM. [6]

7. (*a*) Enlist various features of PPI-8255 and USART-8251 in detail. [6]

(*b*) Describe term PCI Bus. [6]

Or

8. (*a*) Explain different Bus Arbitration Techniques. [6]

(*b*) Write a note on DMA. [6]