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]

<div align="center">Or</div>

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]

<div align="center">Or</div>

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]

<div align="center">Or</div>

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

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