Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[4957]-1082

S.E. (IT) (First Semester) EXAMINATION, 2016

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*) Draw flowchart of Booth's algorithm for signed multiplication. Perform multiplication operation on the following numbers using same. Justify your answer. Multiplicand = 11001 Multiplier = 00011. [7]

(*b*) Draw and explain minimum mode timing diagram for memory write cycle of microprocessor 8086. [6]

Or

2. (*a*) Draw flowchart of Booth's non-restoring division algorithm. Perform division operation on the following unsigned numbers using same. Dividend = 1000, Divisor = 11. [7]

(*b*) Explain the significance of the following signals of micro-processor 8086 : [6]

(*i*) BHE(bar)

P.T.O.

(*ii*) DT/R(bar)

(*iii*) Ready.

3. (*a*) Identify the addressing modes of the following instructions of 8086 and justify your answer : [6]

(*i*) DivCX

(*ii*) Inc[BX]

(*iii*) Test AX, 12FCH.

(*b*) Write control signals generated for execution of sub (R3), R4 instruction. [6]

Or

4. (*a*) Draw and explain memory organization of microprocessor 8086. [6]

(*b*) Compare : [6]

(*i*) Horizontal microinstruction format with Vertical microinstruction format

(*ii*) Hardwired control unit with Microprogrammed control unit.

5. (*a*) Draw and explain Fully Associative Cache Organization. [6]

(*b*) Write notes on : [6]

(*i*) Digital Audio Tape (DAT)

(*ii*) Blu-ray disc.

Or

6. (*a*) Explain how Logical address is converted to Physical Addresses in Paging mechanism. [8]

(*b*) What are the advantages of memory segmentation ? [4]

7. (*a*) Draw and explain block diagram of USART-8251. [7]

(*b*) Draw and explain the format of I/O mode and BSR mode control word of PPI-8255. [6]

Or

8. (*a*) Explain programmed I/O technique with the help of flowchart. [7]

(*b*) Compare memory mapped I/O with I/O mapped I/O. [3]

(*c*) Write a note on Universal Serial Bus (USB). [3]