

Total No. of Questions : 8]

SEAT No. :

P1023

[Total No. of Pages : 2

[4457] - 222

S.E. (Information Technology) (Semester - II)

COMPUTER ORGANIZATION

(2012 Course)

*Time :2 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:-*

- 1) *Answer question Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Multiply following signed 2's complement numbers using Booth's algorithm where : Multiplicand =  $-13_{10}$  and Multiplier =  $-11_{10}$ . [4]
- b) Draw and explain instruction cycle state diagram. [4]
- c) Draw the architecture of 8086 processor. [5]

OR

- Q2)** a) Draw IEEE standard single precision and double precision floating point formats and state various fields in it with their size and significance. Represent  $(-1259.125)_{10}$  in double precision format. [7]
- b) Draw timing diagram for memory read cycle of 8086 & list operations in each T state. [6]
- Q3)** a) Explain following addressing modes of 8086 with an example of each: Immediate addressing, Base addressing, Base index with displacement addressing. [6]
- b) Explain the sequence of operations needed to perform processor functions : [6]
- i) Fetching a word from memory.
  - ii) Performing an arithmetic operation.

OR

**P.T.O**

- Q4)** a) What do you mean by software interrupts? Explain how 8086 will respond to the software interrupts? [6]  
b) Compare : [6]  
i) Hardwired and Micro programmed control unit.  
ii) Horizontal and Vertical micro instruction format.

- Q5)** a) What is MESI protocol? Explain the meaning of each of the four states in the MESI protocol. [6]  
b) Explain direct cache mapping techniques along with its merits and demerits. [6]

OR

- Q6)** a) Write a short note on DA T and Blu-ray disk. [6]  
b) How the virtual address is translated to physical address in virtual memory? [6]

- Q7)** a) Explain features of IC 8251. [3]  
b) Explain PCI bus with a diagram. [4]  
c) For the given specifications find out the control word for 8255: [6]  
i) I/O mode, mode '0', PA-i/p, PB- o/p, PCL- o/p, PCH- i/p.  
ii) BSR mode set PC4 bit to '1'.

OR

- Q8)** a) Compare programmed I/O with interrupt driven I/O. [3]  
b) With the help of neat diagram explain how DMA is used for data transfer? [4]  
c) Draw and explain the block diagram of PPI IC 8255. [6]

