2019

MCA

2nd Semester Examination

MICROPROCESSOR

PAPER – 203

Full Marks : 100

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their

Own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q no 1 and any ***SIX*** from the rest .

1. Answer any ***FIVE*** questions : 5x2

a) Compare data , control and address buses

b) What are the length and addressing modes of MOV M, A and LHI H, 2050 H instructions ?

c) What is the role of READY signal of 8085 microprocessor ?

d) What is the difference between maskable and non- maskable interrupt ?

e) Explain the functions of INTR and INTA signals of 8085 micro processor.

f) What is the advantage of using addressing mode in an instruction ?

g) What is instruction format ?

2. a) Explain with diagram to generate separate control signals for memory and I/O Devices of 8085 microprocessor .

b) How does 8085 microprocessor demultiplex $AD_7 - AD_0$? 3+2+5

c) Write an assembly language program for 8085 microprocessor to multiply two 8 bit data.

3. a) Explain different types of addressing modes of 8085 microprocessor .

b) Find out the execution time of the following code for clock frequency 2 MHZ

```
MVI B, 05 H
MVI A, 0A H
SUB B
DCR A
XRA A
HLT
```

C) What is the function of HOLD and HLDA signals of 8085 ? 4+2+4

4. a) What is subroutine ? Which instructions are used in 8085 microprocessor to Implement subroutine ?

b) What is the purpose of ALE signal in 8085 ?

c) Write an assembly language program for 8085 to reset the Zero flag . (3+2+5)

5. a) Compare instruction cycle, machine cycle and T-state .

b) Differentiate between instruction LDA XB and LDA 2060 H

c) Draw and explain the timing diagram at LXI A, F045 H. (3+2+5)

6. a) Write an assembly language program for 8085 to transfer a block of data From one segment of memory to other .

b) Calculate the total delay of the following where microprocessor speed is 2MHZ. (5+5)

```
        MVI B, 10 H
LOOP2 : MVI C, FF H
LOOP1 : DCR C
        JNZ LOOP1
        DCR B
        JNZ LOOP2
```

7. a) Explain the different addressing modes of 8086 microprocessor.

b) Explain the different flag registers of 8086 microprocessor . (5+5)

8. a) Write an assembly language program to initialize 8255, having control port A as I/P and port B as O/P . (consider mode '0' operation) . (5+5)

b) Explain the different modes of operation of 8255 .

9. a) What are the differences between I/O mapped I/O and memory mapped I/O ?

   b) What is fold back memory space ? Explain with an example .

   c) Distinguish between MAX and MIN mode of 8086 . (4+4+2)

10. Write short notes on (any two) (2x5)

    a) Flag registers at 8085

    b) PUSH, POP and PSW instructions

    c) Internal architecture of 8085 .

[Internal assessment : 30]