KNT/KW/16/5187

Bachelor of Science (B.Sc.) Semester–V (C.B.S.) Examination

FUNDAMENTALS OF MICROPROCESSOR

(Electronics)

Paper–2

Time : Three Hours] [Maximum Marks : 50

N.B. :— **ALL** questions are compulsory and carry equal marks.

1. **EITHER**

(A) Draw the block diagram of Intel 8085 Microprocessor. Explain each block in brief. 4+6

OR

(B) Differentiate between 8085 machine cycle and instruction cycle. What is T-State ? Describe Fetch operation and Execute operation of 8085 instructions. 3+1+6

2. **EITHER**

(A) Illustrate various addressing modes of Intel 8085 microprocessor. Write an Assembly language programme for the following :—

(a) Put the no. 39 H in reg. B

(b) Put the no. 59 H in reg. C

(c) Add these two numbers

(d) Store their sum in memory location 6D00H. 7+3

OR

(B) Initially content of accumulator is F9H. What will be its content after the execution of the following instructions individually :—

(i) CPI F9 H

(ii) SUI F9 H

(iii) ANI F0 H

(iv) XRI F9 H

(v) ADI F9 H. 2+2+2+2+2

3. **EITHER**

(A) What is Stack ? How is stack initialized ? Why stack is reserved at higher end of memory map ? Explain the instruction PUSH PSW and POP PSW. 1+1+2+6

OR

(B) What is subroutine ? State the advantages of subroutine. Explain the following instructions related to subroutine :

(i) CALL Addr

(ii) RET.

Write an assembly language programme for time delay subroutine, using single 8 bit register. 1+1+6+2

4. **EITHER**

(A) Explain the need of interfacing. State and explain different operating modes of 8255. Determine the control word for the following configuration of 8255 :

Port A – Output port in mode – 1

Port B – Output port in mode – 0

Port C_{Lower}(Pc_0, Pc_1, Pc_2) = Output Port

Remaining pins of Port C_{upper} = Output Port. 3+5+2

OR

(B) What is interfacing ? State the need of Data Transfer Scheme. List different types of data transfer schemes. Explain interrupt driven data transfer scheme. Compare programmed data transfer scheme with DMA. 1+1+2+3+3

5. Solve any **ten** questions in brief from the following :

(A) What is the function of ALU in Intel 8085 microprocessor ?

(B) State the different types of buses in microprocessor based system.

(C) Write bit pattern of flags in flag register of 8085 μp.

(D) What is flow chart ?

(E) Give meaning of instruction LHLD address.

(F) Write immediate instructions for data transfer group.

(G) Mention any two conditional jump instructions.

(H) Write two instructions from I/O control group.

(I) State the importance of 'NOP' instruction.

(J) Give the function of $IO/\overline{M}$ signal of 8085 in interfacing.

(K) Mention only one difference between synchronous and asynchronous data transfer.

(L) What is PPI ? 1×10