Roll No. ....

015403

August/September 2022

B.Tech. (ENC) IV SEMESTER

Microprocessors and Its Application (ECP-403)

Time : 3 Hours]   [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*

2. *Answer any four questions from Part-B in detail.*

3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) List out all the vectored interrupts of 8085 with vector address.   (1.5)

    (b) Define instruction cycle and machine cycle.   (1.5)

    (c) Explain the instructions PUSH D and RAL.   (1.5)

    (d) Specify the number of times the following loops are executed.

         MVI A, 17H
         LXI H, 2000H
         MVI B, 15H
         LOOP: ADD M
               DCR B
               JNZ LOOP   (1.5)

(e) List the operating modes of the 8255A PPI. (1.5)

(f) Mention the operating modes of 8254 Programmable Interval Timer. (1.5)

(g) What are the *three* instructions which can be used to make the accumulator content zero? (1.5)

(h) Explain the program counter and stack pointer. (1.5)

(i) What is a subroutine program? (1.5)

(j) What are the different types of instructions in 8086 microprocessor? (1.5)

PART-B

2. (a) Draw the timing diagram of instructions given below:
   (i) ADD M.
   (ii) LHLD 4000H. (10)

   (b) Describe the functions of different flags of ALU of INTEL 8085 microprocessors. (5)

3. (a) Write an 8085 assembly language program to count the even numbers which is stored in memory location 5000H. Assume that total number is 20. (5)

   (b) Describe the various types of addressing modes in 8085 with suitable examples. (10)

4. Explain the operation of 8255 with the neat diagram and also explain the various mode of operation. (15)

5. (a) Define control words of 8257 DMA controller. (5)

   (b) Draw and explain the functional block diagram of 8259 interrupt controller with various priority modes. (10)

6. (a) Explain the architecture of 8086 with neat diagram. (10)

   (b) Explain memory segmentation and physical address generation in 8086 microprocessor. (5)

7. (a) Write an 8086 assembly language program for conversion of ASCII to binary number. (10)

   (b) Explain the following assembler directives:
   (i) OFFSET.
   (ii) ASSUME.
   (iii) EVEN.
   (iv) DT.
   (v) EXTRN. (5)

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