DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2023

MICROCONTROLLER AND INTERFACING

(Maximum Marks:100)   (Time: 3 Hours)

PART - A
(Maximum Mark : 10)

Marks

I.   Answer **all** the questions in one or two sentences. Each question carries 2 marks.

1. Write short note about PSW register.

2. Write the function of **ANL A,Rn** and **ANL A,direct**.

3. List the four sections of IC 8279.

4. Define Step angle.

5. What is the size of internal RAM and ROM in 8051?   (5 x 2 = 10)

PART - B
(Maximum Mark: 30)

II   Answer *any five* questions from the following. Each question carries 6 marks.

1. Write notes on interrupts of 8051.

2. Explain the basic modes of operation of 8255 with their features.

3. Explain the functions of 8051 SFRs associated with serial communication.

4. Draw the pin diagram of 8251.

5. Write short notes on seven-segment display.

6. Write notes about PCON register.

7. Draw the interfacing of DC motor with 8051.   (5 x 6 = 30)

P.T.O

PART – C
(Maximum Mark: 60)
(Answer *one full* question from each unit. Each full question carries 15 marks.)

UNIT - I

III   (a) Explain the registers of 8085.   (10)

       (b) Compare microprocessor and microcontroller.   (5)

OR

IV   (a) Describe RAM organization of 8051.   (8)

       (b) Draw the block diagram of 8051.   (7)

UNIT – II

V   (a) Explain the rotate instructions in 8051.   (7)

       (b) Write a program to find the smallest number in an array.   (8)

OR

VI   (a) Write a program to add two 8-bit numbers.   (7)

       (b) List and explain arithmetic instructions of 8051.   (8)

UNIT – III

VII   (a) Describe the architecture of 8259 with a neat block diagram.   (10)

       (b) Explain the keyboard section of 8279.   (5)

OR

VIII   (a) Describe the architecture of 8255 with a neat block diagram.   (10)

       (b) Draw the pin diagram of 8259.   .   (5)

UNIT – IV

IX   (a) Explain the block diagram of temperature control system using LM35.   (10)

       (b) Define ADC and DAC. List their applications.   (5)

OR

X   (a) Draw the stepper motor interfacing diagram with 8051.   (7)

       (b) Explain with diagram the interfacing of 4 x 4 keyboard with 8051.   (8)

…………..