

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2020**

MICROCONTROLLER AND ENTERFACING

[Maximum Marks: 75]

[Time: 2.15 Hours]

PART-A

(Answer *any three* questions in one or two sentences. Each question carries 2 marks)

- I. 1. List any four important features of 8031.
2. List any four interrupts in 8051.
3. What is the use of SBUF register in 8051?
4. Distinguish between timer function and counter function in 8051.
5. What is transducer? (3 x 2 = 6)

PART-B

(Answer any *four* of the following questions. Each question carries 6 marks)

- II 1. Explain the internal RAM organization in 8051.
2. Describe the architecture of ports in 8051.
3. Explain the IP special function register of 8051.
4. Explain the TCON special function register of 8051.
5. Write notes on immediate, direct and indexed addressing modes of 8051.
6. Explain the pin description of LCD module.
7. Write a note on serial data mode 1 of 8051. (4 x 6 = 24)

PART-C

(Answer *any of the three units* from the following. Each full question carries 15 marks)

UNIT – I

- III (a) Explain the pin functions of 8051. (9)
(b) Explain the PSW register of 8051. (6)

OR

- IV (a) Compare microprocessor with microcontroller. (6)
(b) Explain the internal architecture of 8051. (9)

UNIT – II

- V (a) Explain the following instructions-RRC, DJNZ, MOVX, PUSH, INC. (10)
(b) Explain the steps involved in interrupt processing of 8051. (5)

OR

- VI (a) In a semester, a student has to take five courses. The marks of the student (out of 20) are stored in RAM locations 48H onwards. Write a program to obtain the average marks on port1. (8)
(b) Describe the IE special function register of 8051. (7)

UNIT- III

- VII (a) Describe the TMOD special function register of 8051. (7)
(b) Describe the SCON special function register of 8051. (8)

OR

- VIII (a) Briefly explain Timer mode 2 and Timer mode 3 of 8051. (8)
(b) Explain the PCON special function register of 8051. (7)

UNIT - IV

- IX (a) Draw the diagram of interfacing DAC with 8051. (6)
(b) Describe the interfacing of stepper motor with 8051. (9)

OR

- X (a) Describe dc motor speed control with 8051. (7)
(b) Explain interfacing of 4*4 keyboard with 8051. (8)
