

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017**

MICROCONTROLLER AND INTERFACING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. List any two features of 8051 Microcontroller.
2. MOV A, 40h is the example of which addressing mode of 8051.
3. Write the function of TMOD Register.
4. What are the external Interrupt pins of 8051.
5. Define the conversion time of ADC.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the PSW Register of 8051.
2. Explain the different Addressing Modes of 8051.
3. Explain the PUSH and POP operations in 8051.
4. Explain different serial data transmission modes of 8051.
5. Explain the function of SBUF Register in 8051.
6. Explain the modes of operation of 8051 Timers.
7. Explain the working of a stepper motor.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Draw the block diagram of 8051 and explain. 8
 (b) List the features of 8051 Microcontroller. 7

OR

- IV (a) Draw the Pin diagram of 8051. 8
 (b) Explain the different families of 8051. 7

UNIT — II

- V (a) Explain Rotate Instructions of 8051 with suitable examples. 8
 (b) Explain the interrupts available in 8051. 7

OR

- VI (a) Explain the functions of I E and I P special function registers. 8
 (b) Explain the Arithmetic Instructions of 8051. 7

UNIT — III

- VII (a) Distinguish between Timer and Counter function in 8051. 8
 (b) Illustrate the function of SCON special function register. 7

OR

- VIII (a) Explain the serial data transmission and reception in 8051. 8
 (b) Illustrate the function of TMOD special function register. 7

UNIT — IV

- IX (a) Explain the interfacing of 4×4 keyboard with 8051. 12
 (b) Define the Accuracy in DAC. 3

OR

- X (a) Explain the interfacing of ADC with 8051. 12
 (b) Define Step angle in stepper motor. 3