

TED (15) – 4043

(REVISION – 2015)

543m  
Reg. No.....

Signature .....

FOURTH SEMESTER DIPLOMA EXAMINATION IN  
ENGINEERING/TECHNOLOGY — APRIL, 2017

MICROCONTROLLER AND INTERFACING

(Common to MD, EC and EL)

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. What is the largest hex value that can be moved into register R1 ?
2. List the ports of 8051 ?
3. Which Registers are used as Pointers in Register indirect Addressing mode ?
4. Who provides the clock pulses to 8051 timers if C/T = 0 ?
5. Name the device that is used to obtain an accurate position control of rotating shafts in terms of steps ? (5×2=10)

PART — B

(Maximum marks : 30)

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

1. Enumerate any four differences between microcontroller and microprocessor.
2. Write a program to copy FFH into RAM locations 50H to 60H.
3. Describe the difference between RET and RETI instructions.
4. Explain TMOD register ?
5. List out any six of the features of the 8051 ?
6. Write steps in programming timer 1 in mode 1.
7. Draw the interfacing diagram of LCD system with 8051. (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) Illustrate the mapping of RAM in 8051 and explain. 10  
 (b) Draw pin configuration of 8051. 5

OR

- IV (a) Explain PSW of 8051. 8  
 (b) Explain the structure of port 0. 7

## UNIT — II

- V (a) Explain single bit instructions in 8051. 8  
 (b) Write a program to find number of Zeros in a given byte. 7

OR

- VI (a) Describe data transfer instructions in 8051. 8  
 (b) Explain the interrupts in 8051. 7

## UNIT — III

- VII (a) Explain various timer modes supported by 8051. 10  
 (b) Draw the format of SCON register. 5

OR

- VIII (a) Explain various serial communication modes supported by 8051 ? 10  
 (b) Draw the format of TCON register. 5

## UNIT — IV

- IX (a) Draw and explain interfacing of  $4 \times 4$  keyboard with 8051 ? 10  
 (b) Draw interfacing diagram of a DC motor with 8051 ? 5

OR

- X (a) With a neat diagram explain interfacing of 8051 with DAC. 10  
 (b) Draw interfacing diagram of a stepper motor with 8051 ? 5