TED (15/19) – 4043
(Revision – 2015/19)

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Reg.No……..
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER – 2024

MICROCONTROLLER AND INTERFACING

[Maximum Marks : 100] [Time : 3 hours]

PART – A
(Maximum Marks : 10)

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

1. What is the largest hex value that can be moved into R1 register?
2. List the ports of 8051.
3. Give each example for Direct and Immediate addressing.
4. Name the register that provides control & status information about Counters.
5. Give the function of VEE pin in LCD. (5x2=10)

PART – B
(Maximum Marks : 30)

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

1. List the features of 8051.
2. Draw & label the pin configuration of 8051.
3. Write a program for 8051 to multiply two numbers stored in any two consecutive memory locations and store the result.
4. Describe the difference between RET & RETI instructions.
5. Explain SCON special function register.
6. State the basics of serial communication.
7. Illustrate the interfacing diagram of a stepper motor with 8051.

(5x6=30)

PART – C

(Maximum Marks : 60)

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

UNIT – I

III. (a) Compare Microcontroller & Microprocessor. (9)

(b) Describe the architecture of ports 0 and 1 in 8051. (6)

OR

IV. (a) Explain the internal architecture of 8051. (8)

(b) Explain the data memory organization in 8051. (7)

UNIT – II

V. (a) Explain the instruction set of 8051. (8)

(b) Explain the steps involved in interrupt processing of 8051. (7)

OR

VI. (a) Explain any four addressing modes of 8051. (8)

(b) State the priority of interrupts in 8051. (7)

UNIT –III

VII. (a) Explain the timers in 8051. (10)

(b) Explain serial data transmission and reception in 8051. (5)

OR

VIII. (a) Explain different modes of operation of timers. (5)

(b) Explain different serial data transmission modes. (10)

UNIT – IV

IX. (a) Draw the interfacing of LCD display with 8051. (7)

(b) With neat diagram explain the interfacing of 8051 with ADC. (8)

OR

X. (a) Explain the interfacing of temperature control system with 8051. (7)

(b) Explain the interfacing of water level indicator system with 8051. (8)

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