

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2024**

**MICROCONTROLLER AND INTERFACING**

(Maximum Marks:100)

(Time: 3 Hours)

**PART - A**

( Maximum Marks : 10 )

**Marks**

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

1. List any two microcontroller manufacturers.
2. Define baud rate.
3. List the control registers of 8251.
4. Mention the types of 7 segment display.
5. Define subroutine.

( 5 x 2 = 10 )

**PART - B**

( Maximum Marks: 30 )

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

1. Compare microprocessor and microcontroller.
2. Explain the power saving modes of 8051.
3. Explain briefly serial data transmission and reception in 8051.
4. Explain Decimal Adjust Accumulator operation with example.
5. Describe the scan section of 8279.
6. Describe the commands in LCD.
7. Describe the Classification of stepper motor.

( 5 x 6 = 30)

**PART - C**

(Maximum Marks: 60)

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

**UNIT - I**

- III (a) Explain the architecture of 8051. (8)
- (b) Explain the different registers in 8085. (7)

**OR**

- IV (a) Explain the internal RAM structure of 8051 (8)  
(b) Explain the PSW register of 8051. (7)

**UNIT – II**

- V (a) Describe the addressing modes of 8051. (8)  
(b) Write an ALP to find square of a number present in 4500H and store the Square in 4501H and 4502H. (7)

**OR**

- VI (a) Explain the rotate instructions in 8051 with example. (8)  
(b) Explain briefly the modes of serial data communication of 8051. (7)

**UNIT – III**

- VII (a) Draw and explain the architecture of IC 8255. (8)  
(b) Describe the pin details of 8251. (7)

**OR**

- VIII (a) Draw and explain the architecture of IC 8279. (8)  
(b) Explain the pin details of 8259 (7)

**UNIT – IV**

- IX (a) Explain the interfacing of DC motor with 8051 with neat sketches. (8)  
(b) Explain the interfacing of 7 segment display with 8051. (7)

**OR**

- X (a) With Diagram explain Interfacing of 8051 with ADC. (8)  
(b) Describe the interfacing of 8051 with Temperature sensor IC LM 35 (7)

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