



N19-00546

TED (15) – 4043

Reg. No. ....

(REVISION — 2015)

Signature .....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019**

**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. State the significance of auxiliary carry flag.
2. Mention the operation of CPL A instruction.
3. How interrupts are enabled and disabled in 8051.
4. Differentiate simplex and duplex transmission.
5. Define the term interfacing.

(5×2 = 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 microcontroller.
2. Explain the following instructions.  
INC @Ri ; SUBB A,Rn; DA A ; SWAP A
3. Explain the interrupts in 8051.
4. Describe. SCON special function register.
5. Describe the procedure to generate time delay using TIMER.
6. Illustrate the interfacing of DC motor with 8051.
7. Describe the interfacing of ADC 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) | Explain the various registers of 8051 microcontroller. | 10 |
|     | (b) | Draw the block diagram of 8051 microcontroller.        | 5  |

OR

- |    |     |  |    |
|----|-----|--|----|
| IV | (a) | Explain the pin functions of 8051 microcontroller. | 10 |
|    | (b) | Draw the RAM memory organization of 8051.          | 5  |

UNIT — II

- |   |     |   |    |
|---|-----|---|----|
| V | (a) | Explain the various addressing modes of 8051 with examples. | 10 |
|   | (b) | Write a program to clear lower 128 bytes of internal RAM.   | 5  |

OR

- |    |     |  |   |
|----|-----|--|---|
| VI | (a) | Explain the steps in executing an interrupt in 8051.         | 8 |
|    | (b) | Draw the format of IE special function register and explain. | 7 |

UNIT — III

- |     |     |   |   |
|-----|-----|---|---|
| VII | (a) | Explain the various modes of operation of Timers of 8051. | 8 |
|     | (b) | Describe TMOD special function register.                  | 7 |

OR

- |      |     |  |   |
|------|-----|--|---|
| VIII | (a) | Explain the way to double the Baud rate in 8051. | 8 |
|      | (b) | Draw the format of PCON register and explain.    | 7 |

UNIT — IV

- |    |     |  |   |
|----|-----|--|---|
| IX | (a) | Describe the interfacing of LCD with 8051.       | 8 |
|    | (b) | Explain a temperature control system using 8051. | 7 |

OR

- |   |     |  |   |
|---|-----|--|---|
| X | (a) | Explain how the stepper motor can be controlled by 8051. | 8 |
|   | (b) | Explain water level indicator system using 8051.         | 7 |

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