TED (15) 6032
(Revision – 2015)

A22 – 00451

Reg. No……
Signature …….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2022

MICRO CONTROLLER & PROGRAMMABLE LOGIC CONTROLLERS

[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. State the function of 'RST' PIN in 8051 micro controller.
2. List any two addressing modes in 8051.
3. List the two methods of Serial Data Communication.
4. Realize the NOT function in ladder diagram.
5. State the use of program counter register in 8051. (5 x 2 = 10)

PART-B

(Maximum Marks: **30**)

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

1. List any six features of 8051 micro controller.
2. State the function of program status word register.
3. Differentiate JZ and JNZ instruction.
4. Draw the block diagram of PIC 16.
5. Draw the block diagram of 8255 PPI.
6. Compare relay logic and programmable logic.
7. Draw the block diagram of PLC (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 micro controller with neat block diagram. (9)

(b) Explain TMOD Register in 8051 micro controller. (6)

OR

IV. (a) Draw the Pin diagram of 8051 micro controller. (9)

(b) Draw and explain IE Register. (6)

UNIT – II

V. (a) Explain PUSH and POP instruction with examples. (8)

(b) Explain the instruction RLC A. Apply RLC A instruction in the following. Accumulator holds C5 H and the carry is zero. (7)

OR

VI. (a) Explain all logical operation in 8051. (8)

(b) Execute the following instructions,

1) Accumulator holds C3 H, R0 holds AA H

ADD A, R0

2) ACC= 0110 1101

SWAP A

3) Accumulator holds 5CH

CPL A (7)

UNIT- III

VII. (a) List any eight features of AVR micro controller. (8)

(b) Draw and explain the interfacing of stepper motor with 8051. (7)

OR

VIII. (a) Explain the architecture of AVR with block diagram. (9)

(b) List any six features of PIC micro controller. (6)

UNIT - IV

IX. (a) Explain the different types of programming PLC with examples. (9)

(b) List any six applications of PLC. (6)

OR

X. (a) Explain the following arithmetic instruction in PLC,

1. MUL instruction, 2. DIV instruction (8)

(b) Draw the ladder diagram of a D.O.L. starter and explain it. (7)

****