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(Revision-2015)

N20-02479

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Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER-2020

MICRO CONTROLLER AND PROGRAMMABLE LOGIC CONTROLLERS

[Maximum marks: 75]

(Time: 2.15 Hours)

PART – A

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

1. What is a microcontroller?
2. List any four program branching operations of 8051
3. Define Baud Rate
4. What is a PLC?
5. List any four applications of PLC (3 x 2 = 6)

PART – B

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

1. Compare microcontroller with microprocessors
2. Draw and explain the structure of PSW
3. Describe various arithmetic instructions in 8051
4. Describe asynchronous serial communication and data framing in 8051
5. Draw and explain CWR format of 8255
6. List any four features of PLC
7. What are the selection criteria's of a PLC (4 x 6= 24)

PART – C

Answer ***any of the three units*** from the following. Each full question carries 15 marks

UNIT –I

III (a) what are the features and applications of 8051 microcontroller? (8)

(b) Draw and explain the block diagram of 8051? (7)

OR

IV (a) Draw and explain the pin diagram of 8051 (10)

(b) What are the various interrupts in 8051? (5)

UNIT-II

V (a) Explain various addressing modes in 8051? (8)

(b) Explain various logical operations in 8051? (7)

OR

VI (a) What is a subroutine? Explain timing and delay subroutine. (8)

(b) Write a program to add two 8 bit numbers stored in memory location 2400H and 2401H and store the result in 2402H and 2403H? (7)

UNIT-III

VII (a) Draw and explain the block diagram of 8255? (10)

(b) List any five features of AVR AT tiny 25 microcontroller? (5)

OR

VIII (a) Draw and explain the interfacing of 8051 with a relay? (8)

(b) What are the features of PIC18 microcontroller? (7)

UNIT-IV

IX. (a) What is a ladder diagram? Explain the rules for drawing a ladder diagram. (8)

(b) Explain various steps in PLC operation? (7)

OR

X. (a) Compare PLC with relay panel? (7)

(b) Explain the various PLC hardware components? (8)

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