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(REVISION — 2015)

Reg. No.....

Signature .....

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

MICROCONTROLLERS AND PROGRAMMABLE LOGIC CONTROLLERS

[*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. List the four math flags of 8051.
2. List the classes of control transfer in 8051.
3. Write the three modes of 8255 PPI.
4. Define half duplex and full duplex.
5. Write any four types of PLC. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Write down the features of 8051 microcontroller.
2. Explain Data pointer and Stack pointer in 8051.
3. Write any four logical operations of 8051 with examples.
4. Explain the difference between JUMP and CALL instructions in 8051.
5. List the basic features of PIC 18.
6. Explain the three steps of PLC operation.
7. Point out the selection criteria of PLC for typical application. (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

Unit — I

III (a) Draw the architecture of 8051 microcontroller. 7

(b) Explain SCON, SBUF, NTMODE, NTCON IN 8051 Microcontroller. 8

Or

IV (a) List the special function registers of 8051 with their functions. 7

(b) Describe the pin details of 8051 microcontroller. 8

Unit — II

V (a) Describe immediate Addressing Mode and Direct Addressing Mode. 8

(b) Describe instruction set of 8051 microcontroller. 7

Or

VI (a) Describe timing and delay sub routines. 8

(b) Describe arithmetic operations in 8051 microcontroller. 7

Unit — III

VII (a) Draw the block diagram of AT tiny 25. 8

(b) Distinguish between Asynchronous and Synchronous serial communication. 7

Or

VIII (a) Describe PIC architecture. 8

(b) Explain the controlling of stepper motor with microcontroller 8051. 7

Unit — IV

IX (a) Describe the block diagram of PLC. 8

(b) Explain the types of instructions in PLC. 7

Or

X (a) Explain Timer/counter instruction set. 8

(b) Explain interfacing of traffic control with PLC. 7

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