Reg. No. ....

Signature ....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

MICROPROCESSOR AND MICROCONTROLLERS

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART — A

(Maximum marks : 10)

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

1. State the functions of instruction pointer in microprocessor.

2. Define Stack and stack pointer.

3. Compare MOVC and MOVX instructions.

4. Define the function of TF1 and TR1 bits of TCON register.

5. State the need for interfacing.   (5×2 = 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 8086 microprocessor.

2. Explain briefly the minimum mode of 8086.

3. Draw the pin diagram of 8051 microcontroller.

4. Explain arithmetic instruction in 8051 with examples.

5. Draw and explain the port 1 internal circuitry of 8051.

6. Discuss about Top down and bottom up approach in designing a system.

7. Describe with necessary diagram interfacing of 8051 with DAC.   (5×6 = 30)

[P.T.O.

[135]

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Draw and explain the flag register of 8086 microprocessor. 8

(b) Differentiate between direct addressing mode and indirect addressing mode of 8086 microprocessor. 7

OR

IV (a) Explain how a 20 bit physical address is generated in 8086. 7

(b) Explain about the segment registers in 8086 microprocessor. 8

UNIT — II

V (a) Draw and explain the architecture of 8051 microcontroller. 8

(b) Write an assembly language program to add two 8-bit numbers. 7

OR

VI (a) Define addressing mode. Explain any 3 addressing modes of 8051. 7

(b) Describe the following instructions.

    (i) PUSH DPL   (ii) SWAP A

    (iii) XCH A, Rn   (iv) ORL A, @Ri 8

UNIT — III

VII (a) Explain each bits of special function registers SCON and SBUF in 8051. 8

(b) Explain briefly about different timer modes of operation in 8051. 7

OR

VIII (a) Describe how serial communication is established in 8051. 8

(b) Differentiate between LINKER and LOADER. 7

UNIT — IV

IX (a) Draw and explain the block diagram of 8279. 8

(b) Discuss the interfacing of RAM and 8051. 7

OR

X (a) Explain the control word register of 8255. 8

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

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