TED (15) – 4043

(REVISION — 2015)

Reg. No. .....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

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 function of ALE in 8051 microcontroller.
2. What is the purpose of ALU ?
3. List any two interrupt sources in 8051.
4. Define Baud rate.
5. What is meant by 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.
2. Draw the structure of PORT 1 of 8051 and explain.
3. Compare MOVX and MOVC instructions with example.
4. State the priority of interrupts in 8051.
5. Draw the format of TCON register of 8051.
6. Write a program in which the 8051 gets data from P1 and sends it to P2 continuously while incoming data from the serial port is sent to P0. Assume that XTAL = 11.0592MHz. Set the baud rate at 9600.
7. Explain the method of Interfacing a DC motor with 8051. (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 and explain the memory structure of 8051. 8

(b) Compare microprocessor and microcontroller. 7

Or

IV (a) Draw the pin diagram of 8051 and write the functions of the pins EA, RST and PSEN. 8

(b) Write short note on 128 byte RAM for data storage. 7

Unit — II

V (a) List the steps involved in interrupt processing of 8051. 8

(b) Write an ALP to move a block of data which is stored in internal location to another internal memory location. 7

Or

VI (a) Eplain any four addressing modes of 8051 with example. 8

(b) Write a program to divide two 8 - bit numbers using 8051. 7

Unit — III

VII (a) Define Timer. Explain Timer mode 0 and Timer mode 1. 8

(b) Draw the format of SCON special function register. 7

Or

VIII (a) Which are the different serial communication modes ? Explain. 8

(b) Assume that XTAL = 11.0592 MHz, write a program to generate a square wave of 2 kHz frequency on pin P1.5. 7

Unit — IV

IX (a) Draw and explain briefly the method of interfacing DAC with 8051. 8

(b) Explain interfacing of 4×4 keyboard with 8051 microcontroller. 7

Or

X (a) Explain the interfacing of temperature control system with 8051. 8

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