TED (15/19) - 4043
(REVISION-2015/19)

N21-03603

Reg.No……
Signature…….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANGEMENT/ COMMERCIAL PRACTICE - NOVEMBER 2021

MICROCONTROLLER AND INTERFACING

(Maximum Marks:75) (Time: 2¼ hours)

PART - A

Marks

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

1. Name the Timers in 8051.
2. Which registers are used as internal memory pointers in indirect addressing mode.
3. Name the SFR which gives information about timer over flow.
4. Define the conversion time of ADC.
5. List two applications of stepper motor. (3 x 2 = 6)

PART - B

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

1. Give a comparison between microprocessor and microcontroller.
2. Draw the format of program status word of 8051 and explain each bit.
3. Write a program to find the square of an 8 bit number.
4. Explain the arithmetic instructions of 8051.
5. Explain the function of SCON register in 8051.
6. Describe the steps to generate time delay using timer 1 in mode 2 operation.
7. With diagram explain the interfacing of 8051 with DAC. (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) Draw the block diagram of 8051 and explain. (8)

(b) With diagram explain RAM memory organization of 8051. (7)

OR

IV	a)	Draw the pin diagram of 8051 and explain function of each pin.	(8)
	b)	Draw the structure of PORT 1 of 8051 and explain.	(7)

UNIT – II

V	a)	Explain any four addressing modes of 8051. .	(8)
	b)	Explain briefly the interrupts in 8051 with their vector addresses.	(7)

OR

VI	a)	Explain rotate instructions of 8051.	(8)
	b)	Draw the former of IE register and describe the function of each bit.	(7)

UNIT – III

VII	a)	Explain the steps involved in serial data transmission in 8051.	(8)
	b)	Explain mode 1 operation of timer 0.	(7)

OR

VIII	(a)	Explain the various serial communication modes of 8051.	(8)
	(b)	Describe the function of TMOD register.	(7)

UNIT – IV

IX	(a)	With neat sketch explain the interfacing of temperature control system.	(8)
	(b)	With diagram explain the interfacing of LCD with 8051	(7)

OR

X	a)	Explain the interfacing of 4 x 4 matrix keyboard.	(8)
	b)	Draw and explain the interfacing of DC motor with 8051.	(7)

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