TED (15) 6132

(Revision-2015)

A22-01009

Reg.No.....

Signature.....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL-2022

MICROCONTROLLER

[Maximum marks: 100] (Time: 3 Hours)

PART – A

Maximum marks : 10

I (Answer ***all*** the questions in one or two sentences. Each question carries 2 marks)

1. List two features of AVR.
2. List any four bit handling instructions of AVR.
3. What is the difference between a Timer and a Counter?
4. What is DTE & DCE?
5. List any two difference between serial and parallel Communication. (5 x 2 = 10)

PART – B

Maximum marks : 30

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

1. Explain the differences between Microcontroller and Microprocessor.
2. Explain the features of RISC architecture.
3. Explain the function of three main registers associated with each port of AVR.
4. Explain the different data types for C compiler.
5. Explain the four main registers used for Timer programming.
6. List the different Interrupts of AVR microcontroller.
7. Explain half and full duplex type of communication. (5 x 6= 30)

PART – C

Maximum marks : 60

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

UNIT –I

III. (a) Explain Data Memory Organization of AVR microcontroller. (9)

(b) Explain the different data formats supported by AVR microcontroller. (6)

OR

IV.(a) Explain the Architecture of AVR microcontroller. (9)

(b) Explain AVR status register. (6)

UNIT-II

V. (a) Write an AVR C program to convert 1111 1101 (FD hex) to decimal and display the digits on PORTB, PORTC and PORT D (9)

(b) Explain the different methods of creating Time delays in C. (6)

OR

VI. (a) Write an AVR C program to convert packed BCD 0x29 to ASCII and display the bytes on PORTB and PORTC. (9)

(b) Explain the different logic operations in C. (6)

UNIT-III

VII. (a) Explain the steps for programming Timer 0 in normal Mode. (9)

(b) Explain the TIFR register. (6)

OR

VIII.(a) Explain TCCR0 register. (9)

(b) Explain the steps in executing an interrupt. (6)

UNIT-IV

IX. (a) Explain the Interfacing of DAC to AVR microcontroller. (9)

(b) Explain data framing in Asynchronous serial communication. (6)

OR

X. (a) Explain the Interfacing of keyboard to AVR microcontroller. (9)

(b) Draw the diagram of Interfacing LCD with AVR. (6)

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