6630

BOARD DIPLOMA EXAMINATIONS

SEPTEMBER/OCTOBER-2020

DECE - FIFTH SEMESTER

MICROCONTROLLERS

Time: 3 hours   Max. Marks: 80

PART – A   **3 X 10 = 30**

Instructions : 1. *Answer **all** questions.*
2. *Each question carries **Three** Marks.*
3. *Answer should be brief and straight to the point and should not exceed five simple sentences.*

1. List the features of Microcontrollers.

2. List any three SFRs and state their function.

3. Give the differences between the Machine level programming and Assembly level programming.

4. Define Machine cycle and T-state of 8051 Microcontroller.

5. Write the use of PUSH and POP instructions.

6. Define the term debugging of a program.

7. List the reasons for popularity of LCDs.

8. State key bouncing problem.

9. State the use of 8051 timer as an event counter.

10. State the need of relays for interfacing.

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Instructions: 1. *Answer any **Five** questions*
                2. *Each question carries **TEN** Marks.*
                3. *Answer should be comprehensive and criteria for valuation are the content but not the length of the answer.*

11. Draw the Pin diagram of 8051 Microcontroller and specify the purpose of each pin.

12. Explain the following instructions with examples.

    (i) INC direct   (ii) RRC A   iii) MOVX A,@Ri

      iv) DJNZ direct, offset   v) MOV C,bit

13. a) Explain any 3 addressing modes of 8051 with examples.   6M

    b) Write the Flags effected on the following instructions and illustrate with examples.   4M

        I) ADDC A, Rn   (II) ANL C, bit

14. List and explain the types of Return instructions of 8051 Microcontroller.

15. Write a program to add two 8-bit numbers stored in internal data memory locations 30 H and 31 H. store the 16-bit sum in locations 32H and 33H (MS Byte).

16. Draw and explain the interfacing of 16x2 LCD with 8051.

17. Draw and explain the interfacing of Solid state Relay with 8051 to drive mains operated motor.

18. a) Draw the interfacing of a driver circuit required to run a stepper motor using 8051 Microcontroller.   5M
    b) Write an assembly language program to run stepper motor continuously.   5M