6630

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

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.   Compare Microprocessors and Microcontrollers.

2.   State the function of PSW.

3.   Give the instruction format of 8051.

4.   Define fetch cycle, execution cycle and instruction cycle.

5.   Explain the term " Debugging ".

6.   Draw any three symbols used in flow charts.

7.   Draw the pin diagram of 16X2 LCD module.

8.   List any three instruction command codes for programming an LCD module.

9.   State the need of opto - coupler for interfacing.

10. List RS232 pins of DB9 Connector.

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PART – B   5 X 10 = 50

Instructions: 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and Criteria forValuation is the content but not the length of the answer.*

11. Draw and explain the functional block diagram of 8051 microcontroller.

12. Explain the following instructions with examples.

    1)DA A   2) ORL A, Rn   3) XCHD A,@Ri

    4)LCALL ADDR16   5)SETB bit

13. Explain the addressing modes of 8051 with examples.

14. a) Define " Subroutine " and explain its use.   4M

    b) Explain the sequence of program when subroutine is called

       & executed.   6M

15. Write an assembly language program to compute the sum of two10 byte (multi byte) numbers. Assume that the first number is stored in internal data memory locations 30H to 39H (MS Byte) and the second number in locations 40H to 49H (MS Byte). Store the 10 byte sum in locations 40H to 49H (MS Byte).

16. Draw and Explain the Interfacing of a 4x4 Matrix Keyboard with 8051.

17. Explain the Pulse width modulation for controlling the speed of small DC Motor using 8051 Microcontroller.

18. Draw and Explain the interfacing of a driver circuit required to run a Stepper Motor using 8051 Microcontroller.