C09-EC-**603**

3759

BOARD DIPLOMA EXAMINATION, (C-09)
OCTOBER/NOVEMBER-2018
DECE-SIXTH SEMESTER EXAMINATION

MICROCONTROLLERS

Time : 3 Hours]   [Total Marks: 80

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PART-A

3X10=30

Instructions   :   1. Answer **All** questions.

2. Each question carries **Three** marks.

3. Answer should be brief and straight to the point and shall not exceed

five simple sentences.

1. Distinguish between microprocessor and microcontroller.

2. List any six special function registers of 8051.

3. Classify the instruction set of 8051

4. Define opcode and oerand of an instruction.

5. List any three logical group of instructions.

6. Write a program to perform 2's complement of an 8-bit number stored in memory.

    Location 2400H and store the result in 2401H

7. Write the uses of subroutine

8. List the features of 8257 IC.

9. Mention the various interfacing devices used with 8051.

10. Write the operating modes of 8255.

PART-B

Instructions :   1. Answer any **Five** questions

                            2. Each question carries **ten** marks.

                            3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the block diagram of 8051 and explain the function of each block.

12. (a) Explain Fetch cycle, Execution cycle and instruction cycles.

     (b) Distinguish between machine cycle and T-state.

13. Explain various addressing modes of 8051.

14. Explain the following instructions of 8051.

     a) MOVX @ DPTR,A b) PUSH Direct (c) POP Direct (d) DIV AB (e) DA A.

15. Write a program to multiply two 8 bit numbers stored in the memory locations 2400H and 2401H. Store the result in the locations 2402 H and 2403H.

16. Write a Program using Timer-1 to generate a time delay of 20µs. assume the Crystal frequency is 20 MHZ.

17. Draw the functional block diagram of 8225 and explain the function of each block

18. (a) Draw the interfacing circuit of 8257 with 8051.

     (b) Draw the functional block diagram of 8251.

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