C14–EC–**405**

4459

BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2016

DCE—FOURTH SEMESTER EXAMINATION

MICROPROCESSOR AND MICROCONTROLLER
PROGRAMMING

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List the important features of 8085 microprocessor.

2. Define the terms opcode and operand.

3. Distinguish between microprocessor and microcontroller.

4. State the function of program counter and data pointer.

5. Define machine cycle and instruction cycle.

6. Classify instruction set according to byte length.

7. Draw a flowchart to add two numbers stored in the RAM locations 60H and 61H and to store the result in the register R6.

8. Define subroutine and explain its use.

9. Explain Max 232 interfacing.

10. List RS232 pins of DB-9 connector.

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PART—B   10×5=50

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Instructions : (1) Answer *any* **five** questions.

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

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

11. Draw the functional block diagram of 8085 microprocessor and explain the function of each block.   10

12. Explain the internal and external memory organization of 8051 microcontroller.   10

13. *(a)* Explain the various ports of 8051.   5

     (b) Draw the pin diagram of 8051 microcontroller.   5

14. Explain different addressing modes of 8051 with examples.   10

15. *(a)* Explain arithmetic instructions with examples.   5

     (b) Explain conditional jump instructions with examples.   5

16. *(a)* Write a program to perform single-byte addition.   5

     (b) Explain the sequence of program when the subroutine is called and executed.   5

17. *(a)* List the specifications of latest processors used in Desktop/Laptop computers.   5

     (b) Explain the concept of multiple ending and nesting of subroutines.   5

18. *(a)* Write a program for generating a square wave of 2 kHz on pin 1.4.   5

     (b) Explain how to use an 8051 timer as an event counter.   5

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