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4459

BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2016

DECE—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 latest processors used in personal computers.

2. Define opcode and operand with example.

3. Write the comparison between microprocessors and micro-controllers.

4. List the features of 8051.

5. Give the instruction format of 8051.

6. List the differences between machine level and assembly level programming.

7. Define subroutine and explain its use.

8. List various symbols used in flowchart.

9. List RS232 pins of DB-9 connector.

10. Describe shortly about connectors MAX-232 and MAX-233 standards.

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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 *(a)* the functional block diagram and *(b)* pin out diagram of 8085.   5+5

12. Explain architecture of microcontroller 8051 with neat sketches.   10

13. *(a)* Draw the pin diagram of microcontroller 8051.   6

      (b) Draw the register structure of 8051.   4

14. *(a)* Explain various addressing modes of 8051 with examples.   6

      (b) Explain any four arithmetic instructions with examples.   4

15. Explain unconditional and conditional jump instructions with examples.   4+6

16. *(a)* Explain execution of OUT instruction of 8085 with timing diagram.   4

      (b) Define debugging and explain the principles of single-step and break point debugging techniques.   6

17. *(a)* Explain PUSH and POP instructions.   4

      (b) Explain concepts of nesting and multiple ending in subroutines.   6

18. *(a)* Write a program to receive message serially and store it in memory.   5

      (b) Explain how to program external hardware interrupts of 8051.   5

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