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C09–EC–603

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2015

DECE—SIXTH SEMESTER EXAMINATION

MICROCONTROLLERS

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. Distinguish between microprocessors and microcontrollers.

2. Explain bitwise description of TMOD register.

3. Explain the instruction format of 8051 microcontroller.

4. Classify the instruction set of 8051 as per their functions.

5. Describe MOV A, @R1 and CLR P2.1.

6. Write a program to find the sum of two 8-bit numbers.

7. Explain single-step method of debugging.

8. Explain the control word of 8255.

9. Explain the asynchronous mode word format of 8251.

10. Explain RS-232 standard.

PART—B

10×5=50

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 8051 and explain the function of each block.

12. Explain the internal RAM organization in 8051.

13. Explain various addressing modes of 8051 and give two examples of each.

14. Explain the following instructions :

(a) MOVX A, @DPTR

(b) ADD A, DIRECT

(c) XRL A, # data

(d) CLR C

(e) JC Addr

15. Write a program to find the sum of a series. Assume six bytes are in series. R4 register used as a counter. R1 register used as memory pointer and series stored from 60 H i-RAM location.

16. Explain the sequence of program when subroutine is called and executed.

17. Draw and explain the functional block diagram of 8255.

18. Draw and explain how 8251 can be interfaced with 8051 and determine control word.

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