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C09–EC–603

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2016

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. List out any six SFRs of 8051.

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

3. List out the types of instruction based on operation.

4. Mention any six Boolean group of instructions.

5. Define opcode, operand and label.

6. Write a program to add two numbers stored in memory locations, 60 H and 61 H of i-RAM.

7. Define subroutine and mention the advanced subroutine techniques.

8. Explain the need of interfacing.

9. Explain control word of 8255.

10. State the features of 8257.

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. Explain different parts of 8051 microcontrollers.

12. Draw the architecture of 8051 and explain in detail.

13. Explain the addressing modes of 8051 with examples.

14. Explain the following instructions in detail with their syntax :

(a) MOV A, RO

(b) MOUX A, @DPTR

(c) PUSH direct

(d) XCH A, RO

(e) CLR C

15. Write an assembly language program to set up a time delay of 1 msec by using timer 0 under mode 1. Assume the crystal frequency as 11·0592 MHz.

16. *(a)* Explain the sequence of operations when a subroutine is called and executed. 5

(b) Define debugging and explain the techniques of debugging. 5

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

18. *(a)* Explain RS-232c standard used in communication interfacing. 6

(b) Explain the two modes of operation of 8257. 4

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