3759

BOARD DIPLOMA EXAMINATION, (C–09)
OCT/NOV—2014
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. Compare between microprocessor and microcontroller.   ½×6=3

2. What are the interrupts available in 8051 microcontroller? Give their priority.   2+1=3

3. Define an addressing mode and list different addressing modes available in 8051.   2+1=3

4. Explain the following instructions :   1½+1½=3

(a) ANL A, Direct

(b) XRL A, @ R_2

5. List any three bit manipulation instructions available in 8051.

1×3=3

6. Write a program to multiply two 8-bit numbers.   3

7. What is debugging? Explain the functions of debugging.   1+2=3

8. State the need for communication interface. 3

9. Draw the serial communication through 8051 using RS-232C. 3

10. State the features of 8251. ½×6=3

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 the functions of any ten special function registers of 8051 microcontroller. 10

12. Explain fetch cycle, execute cycle, instruction cycle, machine cycle and T-state. 2×5=10

13. What is an instruction format? Explain one-, two- and three-byte instructions with example. 3+7=10

14. Explain any five arithmetic groups of instructions briefly and mention the effect of flags to these instructions. 10

15. Define subroutine and explain nesting, multiple ending and common ending in subroutines. 2+4+4=10

16. Write a program to transfer a block of 10 bytes from 30 H to 50 H. 10

17. Draw and explain the block diagram of 8255 PPI. 5+5=10

18. *(a)* Draw the functional block diagram of 8257. 5

(b) Draw and explain interfacing of 8251 with 8051. 3+2=5

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