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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2018

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 the features of 8051.

2. List the interrupts of microcontrollers along with their vectored address.

3. Mention any six arithmetic group of instructions.

4. Define opcode, operand and label.

5. Classify instruction set according to its length.

6. What is the value of A after executing the following program :

(a) MOV A, #56 H

(b) ANL A, #0F H

7. Write a program to find 2's complement of a number stored in i-RAM of 6A H. Store the result in 70 H.

8. Explain the control word of 8255.

9. Explain RS 232 C standards.

10. Mention 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. Draw the PIN diagram of 8051 and explain each pin.

12. Explain the memory organization of 8051.

13. Explain the addressing modes of 8051 with examples.

14. Explain the following instructions in detail with syntax :

(a) RR A

(b) RL A

(c) RLC A

(d) RRC A

(e) SWAP A

15. Write a program to generate a time delay of 5 m sec by using timer 1 under mode 1. Assume the crystal frequency as 11·0592 MHz.

16. Write a program to add two 16-bit numbers 1234H and 8765H.

17. Draw the block diagram of 8251 and explain each block.

18. *(a)* Explain the modes of operation of 8257. 4

(b) Explain BSR mode and I/O modes of 8255. 6

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