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BOARD DIPLOMA EXAMINATION, (C–09)
MARCH/APRIL—2017
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. List the features of 8051 microcontroller.

3. Classify the 8051 instructions as per their length with example.

4. Define opcode and operand with examples.

5. Describe RL A and DJNZ R4, addr.

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

7. Explain debugging of a program.

8. Explain the control word of 8255.

9. Explain RS 232 C standards.

10. Explain the need for interfacing.

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 and explain the functional block diagram of 8051 microcontroller.

12. *(a)* State the function of program counter and data pointer registers. 4

(b) Draw the format of TMOD register and state the modes of operation. 6

13. State and define the addressing modes of 8051 microcontroller with suitable examples.

14. Explain the following instructions :

(a) PUSH direct

(b) MUL AB

(c) ANL A, @R1

(d) CLR P2·5

(e) LCALL addr(16)

15. Write a program to generate 5 msec time delay. Assume the 8051 XTAL frequency is 11·0592 MHz.

16. *(a)* Explain CALL and RET instruction. 4

(b) Write a program to multiply two 8-bit numbers stored in the locations 30 H and 31 H and store the result in 32 H and 33 H. 6

17. Draw and explain the block diagram of 8257 programmable DMA controller.

18. Draw and explain the block diagram of 8255.

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