C09–EC–**603**

3759

BOARD DIPLOMA EXAMINATION, (C–09)
MARCH/APRIL—2014
DCE—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 microcontroller and microprocessor.

2. List the interrupts in 8051 microcontroller.

3. Classify the instruction set of 8051.

4. List the conditions that set the overflow (OV) flag.

5. List any three conditional jump instructions.

6. Convert 16 H to its 2's compliment representation.

7. Define a subroutine and mention its use.

8. What is the need of interfacing?

9. List the features of 8257 IC.

10. Describe the RS 232 standard.

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation are the content but not the length of the answer.

11. Draw and explain the functional block diagram of 8051 microcontroller. 5+5

12. *(a)* Distinguish between machine cycle and T state. 4

(b) Explain fetch cycle, execution cycle and instruction cycle. 6

13. Explain any five arithmetic instructions of 8051 by giving one example for each. 10

14. Explain the addressing modes of 8051 with relevant examples. 10

15. Program timer 1 to generate a time delay of 100 s. Assume crystal frequency is 20 MHz. 10

16. *(a)* Mention the bits of TMOD register and state the purpose of each bit. 8

(b) Indicate which mode and which timer is selected by using the instruction MOV TMOD, # 01H. 2

17. Explain the functional block diagram of DMA controller 8257. 10

18. Explain the interfacing of 8255 with microcontroller 8051. 10

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