



C09-EC-603

3759

**BOARD DIPLOMA EXAMINATION, (C-09)
APRIL/MAY—2015
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 microcontroller and microprocessor.
2. List any six special function registers of 8051 microcontroller.
3. Draw the instruction format of 8051. Write the importance of each field.
4. Write any three data transfer group of instructions. Give examples.
5. Classify the instruction set of 8051 based on their operation.
6. Write a program to subtract two 8-bit numbers. Assume the numbers.
7. What is a subroutine? Write its advantages.
8. State the need for interfacing.
9. List the operating modes of 8255 PPI.
10. Write the features of programmable DMA controller 8257.

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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 functional block diagram of 8051 and explain the function of each block. 5+5=10
- 12.** Explain clearly the following : 2½×4=10
- (a) Fetch cycle
(b) Execute cycle
(c) Instruction cycle
(d) Machine cycle
- 13.** Explain various addressing modes supported by 8051 with suitable examples. 10
- 14.** (a) Explain any five branch group of instructions. 5
(b) Explain any five arithmetic group of instructions. 5
- 15.** Write a program to generate 5 ms time delay. Assume 8051 crystal frequency is 12 MHz. 10
- 16.** (a) Write a program to find the product of two 8-bit numbers 32H and 68H. 5
(b) Explain the principles of single-step and breakpoint debugging. 5
- 17.** Draw the functional block diagram of 8255 and explain the function of each block. 10
- 18.** (a) Draw and explain interfacing of 8257 with 8051. 5
(b) Draw the functional block diagram of 8251. 5
