



C09-EC-603

3759

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—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. List the features of 8051 microcontrollers.
2. Explain stack pointer and program counter of 8051.
3. Compare between machine language and assembly language.
4. Explain the instruction format of 8051.
5. Mention any six logical groups of instructions.
6. Explain the types of CALL instruction.
7. What is the value of 'A' register after executing the program given below?

```
MOV A, #56H
SWAP A
```

- * 8. Explain the I/O modes of operation of 8255.
- 9. Mention the features of 8251.
- 10. Explain the mode set register 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 block diagram of 8051 and explain each block.
- 12. (a) List the interrupts of 8051 along with its vectored address. 5
 (b) Compare between microcontrollers and microprocessors. 5
- 13. Classify the instruction set based on operation and explain each with examples.
- 14. Explain the following instructions in detail with their syntax :
 (a) CLR C
 (b) CPL C
 (c) SET B $P_0 6$
 (d) MUL AB
 (e) DJNZ R_0 , addr
- 15. Write an assembly language program to find the sum of a series of 10 bytes of data stored in *i*-RAM starting from 40H and store the sum in 60H and carry in 61H.
- 16. Write a program to generate 10 m sec time delay. Assume the total frequency is 11.0592 MHz.
- * 17. Draw the block diagram of 8257 and explain each block.
- 18. (a) Explain mode word and command word of 8251. 6
 (b) List out the features of 8254. 4
