



C16-AEI-503

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BOARD DIPLOMA EXAMINATION, (C-16)

OCT/NOV—2018

DAI—FIFTH SEMESTER EXAMINATION

MICROCONTROLLERS AND APPLICATIONS

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. Write the functions of the following registers in 8051 :
 - (a) Program Counter (PC)
 - (b) Stack Pointer (SP)
2. Write any three features of 8051 microcontroller.
3. List the input/output ports of 8051.
4. List any three difference between machine level programming and assembly level programming.

- * 5. Give any *one* example for the following 8051 instructions :
- (a) One byte instruction
 - (b) Two byte instruction
 - (c) Three byte instruction
6. List any three bit manipulation instructions.
7. Define the term debugging.
8. List any three conditional JUMP instructions.
9. Draw CWR (Control Word Register) format of 8255.
10. List and name three different types of interfacing peripheral IC.

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. 10
12. Explain internal memory and external memory organization of 8051. 5+5=10
13. What are various addressing modes available in 8051? Explain with example. 10
- * 14. List the major groups of instructions in 8051. Give two example for each group and explain it. 10
15. (a) Illustrate the concept of calling a subroutine and returning from it. 6
- (b) Explain the function of PUSH and POP instructions. 4

- * 16. (a) List various types of symbol used in drawing the flowcharts. 5
- (b) Draw the flowchart to find the addition of two 8-bit numbers. 5
17. Draw the functional block diagram of 8257 and explain the functions of each block. 4+6=10
18. Draw and explain the schematic diagram of stepper motor interface with 8051 microcontroller. 5+5=10

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