



C14-EC-405

**4438**

**BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH/APRIL—2018  
DECE—FOURTH SEMESTER EXAMINATION  
MICROPROCESSOR AND MICROCONTROLLER  
PROGRAMMING**

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 any three latest processors used in Desktop/Laptop computers.
2. Draw the block diagram of a microprocessor.
3. List any six features of 8051 microcontroller.
4. Give any three differences between Machine Level Language and Assembly Level Language.
5. Define op code and operand with one example for each.
6. List any six conditional jump instructions of 8051.
7. Define a subroutine and mention its use.
8. Draw a flowchart to multiply two numbers 56H and 33H.

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9. Mention the reasons for popularity of LCDs.
10. Explain the significance of RS-232 standard.

**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. Explain the execution of STA and LDA instructions with the help of timing diagrams.
12. (a) Explain the multiplexing of address and data bus. 5  
(b) List the special function registers associated with the following functions : 5  
(i) Interrupts  
(ii) I/O ports  
(iii) Power saving mode
13. Explain the internal memory organization of internal RAM of 8051.
14. Explain different addressing modes of 8051 and give examples of each.
15. Explain any five arithmetic instructions and recognize the flags that are set or/and reset with an example for each.
16. (a) Write an assembly language program to add two 8-bit numbers. 5  
(b) Explain about single-step and break-point debugging. 5
17. Explain the concept of nesting, multiple ending and common ending in subroutines.
18. Explain interfacing a 4 × 4 matrix keyboard.

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