



C16-AEI-503

**6611**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JANUARY/FEBRUARY—2022**

**DAEIE - 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. List the features of 8051 microcontroller.
2. State the need of timers in 8051.
3. List the input/output ports of 8051.
4. Define fetch cycle of 8051.
5. Draw the timing diagram of 8051 memory read.
6. Distinguish between Machine cycle and T-state of 8051.
7. Draw the various symbols used in flow chart.
8. Define the term subroutine.
9. State the need of interfacing.
10. List the operating modes of 8257.

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## PART—B

10×5=50

- Instructions :** (1) Answer **five** questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain functional block diagram of 8051 microcontroller.
12. Explain the interrupts of 8051.
13. Explain data transfer and arithmetic instructions.
14. Explain different addressing modes of 8051.
15. Write a program to find largest number in an array using jump instructions.
16. (a) Explain LCALL and ACALL instructions of 8051.  
(b) Explain PUSH and POP instructions of 8051.
17. Explain the interfacing diagram of 8255 with microcontroller 8051.
18. Explain seven-segment display interface using 8051.

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