C14–AEI–**504**

4610

BOARD DIPLOMA EXAMINATION, (C–14)

SEPTEMBER/OCTOBER - 2020

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. Define the instruction format of 8051.

6. State the difference between machine cycle and T-state of 8051.

7. Draw the various symbols used in flow chart.

8. Write the instruction to set up time delay.

9. Define the term 'interfacing'.

10. List the operating modes of 8257.

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 register structure of 8051.

12. Explain data transfer and arithmetic instructions.

13. *(a)* Draw the timing diagram for memory write and memory read operations of 8051.   7

(b) List the different addressing modes of 8051.   3

14. Write a program to find the largest number in an array using jump instructions.

15. *(a)* Explain how information is exchanged between the program counter and the stack.   7

(b) Identify the stack pointer register when a subroutine is called.   3

16. *(a)* Explain the unconditional return and conditional return instructions.   6

(b) Explain single-step dynamic debugging technique.   4

17. Explain the interfacing diagram of 8255 with 8051 microcontroller.

18. Explain seven-segment display interface using 8051.

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