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BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DAEI - FOURTH 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. Draw the pin diagram of 8051.
2. Define the term interrupt.
3. List the serial port interrupts of 8051.
4. State the difference between Machine cycle and T-state of 8051.
5. List any three of arithmetic group instructions.
6. Define the term machine language.
7. Draw the flow chart for addition of two 8-bit numbers.
8. State the use of sobroutine.
9. List the operating modes of 8257.
10. Define the term interfacing.

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PART—B

8×5=40

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

11. (a) Explain the timers/counters of 8051.

(OR)

(b) Explain internal and external memory organization of 8051.

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

(OR)

(b) Explain different addressing modes of 8051.

13. (a) Explain nesting, multiple ending and common ending techniques in subroutines.

(OR)

(b) Write a program to find smallest number in an array using jump instruction.

14. (a) Explain the functional block diagram of 8255.

(OR)

(b) Explain the functional block diagram of 8257-DMA controller.

15. (a) Explain seven-segment display interfacing using 8051.

(OR)

(b) Explain stepper motor control interface using 8051.

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PART—C

1×10=10

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

- 16.** Write a program to transfer a block of 10 bytes from location 20H– 29H in internal RAM to location 30H–39H in internal RAM.

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