

7441

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DECE - FOURTH SEMESTER EXAMINATION

MICROPROCESSORS

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. Define address bus, data bus and control bus.
2. List different flags of 8086.
3. State the function of instruction pointer.
4. List any six data transfer group of instructions.
5. Write the value of AX register after execution of the following code :  
MOV AX, 3F0FH  
AND AX, 0018H
6. State the use of assembler and debugger.
7. List any three assembler directives.
8. Define pipelining.
9. List any three major functional differences between single-core and dual-core processors.
10. List any three important features of Intel core i5 processors.

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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) Compare assembly level language, high level language and machine level language. 8

**(OR)**

(b) (i) Compare 8-bit and 16-bit microprocessors. 5

(ii) List the applications of microprocessors. 3

**12.** (a) Draw and explain the functional block diagram of 8086. 8

**(OR)**

(b) Explain the interrupt response in 8086. 8

**13.** (a) Explain generation of 20-bit physical address in 8086 with an example. 8

**(OR)**

(b) Describe the minimum mode of operation of 8086. 8

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**14.** (a) Explain any eight conditional branch instructions of 8086. 8

**(OR)**

(b) Explain any eight arithmetic group of instructions of 8086. 8

**15.** (a) Write an assembly language program of 8086 to perform conversion of 4-bit binary code to gray code. 8

**(OR)**

(b) Write an assembly language program of 8086 to find the smallest of the given series of numbers. 8

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## PART—C

10×1=10

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

- 16.** What is the impact on flags of 8086 after subtraction of 65 H from 84 H? Explain with an assembly language program to subtract these two numbers.

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