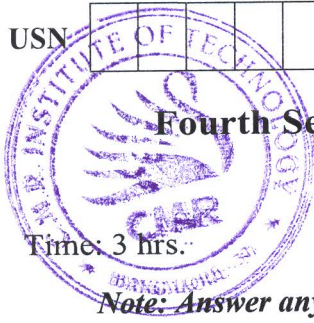


# CBCS SCHEME

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17EC46



**Fourth Semester B.E. Degree Examination, June/July 2023**

## Microprocessor

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. Draw and explain the internal architecture of 8086 microprocessor. (10 Marks)  
b. What is addressing mode? With examples explain any five addressing modes of 8086. (10 Marks)

**OR**

- 2 a. With a neat diagram, explain the flag register of 8086 microprocessor. (10 Marks)  
b. With example explain (any 5 of each)  
i) Data transfer instructions of 8086  
ii) Conditional branch instructions of 8086. (10 Marks)

### Module-2

- 3 a. With example explain any five string manipulation instructions of 8086. (10 Marks)  
b. What are assembler directives? With example explain any five assembler directives of 8086. (10 Marks)

**OR**

- 4 a. Explain the following instructions of 8086 with suitable example:  
i) DAA ii) IMUL iii) DIV iv) RCR v) LOOP. (10 Marks)  
b. Write an ALP to find factorial of a 8 bit number and store the result in the memory location fact. (10 Marks)

### Module-3

- 5 a. Explain the operation of stack using PUSH and POP instructions. (08 Marks)  
b. Differentiate between MACRO and PROCEDURE. (06 Marks)  
c. Explain the action taken by the 8086 microprocessor when an interrupt occurs. (06 Marks)

**OR**

- 6 a. Write an ALP to generate a delay of 20msec using 8086 microprocessor running at 10MHz. (10 Marks)  
b. Explain Interrupt and Trap flags. Write a procedure to set trap flag and a procedure to reset trap flag. (10 Marks)

### Module-4

- 7 a. Explain the operation of minimum mode of 8086 with suitable diagram. (10 Marks)  
b. With memory map show the interfacing of two  $4K \times 8$  EPROM and two  $4K \times 8$  RAM chips to 8086 microprocessor. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. With a neat diagram explain the maximum mode of 8086 system. (10 Marks)  
b. Write the control word format of 8255 and explain the 8255 modes of operation. (10 Marks)

**Module-5**

- 9 a. With a neat schematic to interface ADC 0808 with 8086, write an ALP to read analog input and convert it into digital output. (10 Marks)  
b. Write an ALP to rotate stepper motor in clockwise direction for one full rotation and in anticlockwise direction for two rotations with different speeds. (10 Marks)

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OR

- 10 a. Draw the schematic to interface DAC 0800 with 8086 and write an ALP to generate a triangular wave of suitable time period. (10 Marks)  
b. With example explain the following functions of DOS INT 21H:  
i) Function 01H  
ii) Function 02H  
iii) Function 09H  
iv) Function 4CH. (10 Marks)

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