

This question paper contains 3 printed pages]

**NY—207—2023**

**FACULTY OF SCIENCE**

**M.Sc. (Second Year) (Fourth Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New/CBCS Pattern)**

**PHYSICS**

**Paper PHY-403**

**(Microprocessor and Microcontroller)**

**(Monday, 11-12-2023)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) All questions carry equal marks.*

*(iii) Draw diagrams wherever necessary.*

1. Draw the pin configuration of 8085 microprocessor and explain the function of each pin in brief. 15

*Or*

(a) Draw and explain the timing diagram of memory read and memory write machine cycle. 8

(b) Draw the format of Flag register in 8085 and explain each flag in brief. 7

P.T.O.

2. What is a Program ? Give the steps involved in Programming by using Flowchart symbols giving an example. 15

Or

- (a) Write an Assembly Language Program (ALP) for the subtraction of two-bit binary numbers having sum 8-bit along with its flow-chart. 8
- (b) Explain any *four* instructions from data transfer group in instruction format with an example. 7
3. Draw the architecture of 8051 microcontroller and explain it in brief. 15

Or

- (a) Write a detailed note on Special Function Registers in 8051 microcontroller. 8
- (b) Explain the minimum mode of operation in 8086 microprocessor. 7
4. Draw the architecture of 80196 and explain it in brief. 15

Or

- (a) Draw the block diagram of Intel 80960. 8
- (b) Write a detailed note on registers of Intel 80196. 7

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( 3 )

NY—207—2023

5. Write short notes on (any *three*) :

15

- (a) Interrupts in 8051
- (b) Instruction word size in 8085
- (c) Data Memory Access (DMA)
- (d) I/O processor.

NY—207—2023

3