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 resister 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 substraction 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

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.