NA—184—2023

FACULTY OF SCIENCE

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

ELECTRONICS

Paper-IX

(Introduction to Microcontroller Intel 8051)

(Saturday, 23-12-2023)   **Time : 2.00 p.m. to 4.00 p.m.**

Time—2 Hours   *Maximum Marks—40*

N.B. :— (1) Attempt *all* questions.

     (2) Draw neat and labelled diagrams wherever necessary.

     (3) Figures to the right indicate full marks.

1. Draw well labelled block diagram of a typical microprocessor. Compare microcontroller and microprocessor.   15

Or

(*a*) Explain register and indexed modes of addressing of 8051.   8

(*b*) Explain the following instructions with suitable example :   7

     (*i*) MOV DPTR, # data 16

     (*ii*) ORL A, direct.

2. Write ALP for 8051 microcontroller :   15

(*i*) To add two bytes (sum 8-bit)

(*ii*) To determine 2's complement of a byte.

Explain each with a suitable example of input data.

                                            P.T.O.

Or

(*a*) Write names of any ten SFRs in 8051. Explain structure and uses of any *one* SFR. 8

(*b*) Explain mode-O of 8051 timer. 7

3. Attempt any *two* of the following : 10

(*a*) Explain PSW of 8051

(*b*) Describe the instruction ANL A # data

(*c*) Write an ALP to divide an 8-bit numbers by another 8-bit number

(*d*) Interrupts in 8051 microcontroller.