# University of Asia Pacific
## Department of Computer Science and Engineering
### Program: B.Sc. in CSE

**Final Examination**          **Spring-2023**          3$^{rd}$ year 1$^{st}$ Semester

Course Code: CSE 311     Course Title: Microprocessors and Assembly          Credit: 3

Language

Time: 3.00 Hours                                                              Full Mark: 50

**Instructions:**
1. There are five (5) Questions. Answer all of them. All questions are of equal value. Part marks are shown in the margins.
2. Non-programmable calculators are allowed.

| | | | | |
|---|---|---|---|---|
| 1. | a. | Define the functions and elements of BIU and EU in 8086 architecture. | [5] | CO1 |
| | b. | Pipelining can speed up a processor function- explain from the 8086-architecture concept. | [5] | CO1 |

2.  a.  Write an assembly code to do the following actions:          [5]  CO1
    i.    Input a number character and convert into digit
    ii.   Display a prompt message "Good Luck!!!"
    iii.  Display First letter of your Name
    iv.   Find out the 2's complement of DL
    v.    Subtract two values without using the SUB instruction

b.  Find out the status of flags (CF, SF, ZF, PF, AF, OF) after the execution of the following instructions:          [5]  CO2

    i.    INC AL
    ii.   NEG AL
    iii.  XCHG AL, BL
    iv.   ADD Al, BL
    v.    AND AL, 01H

[Consider AL= Last two digits of your registration number in Hex form and BL= 0FH]

3.  a.  Explain the functions of AX and DX during multiplication and division operations.          [5]  CO

b.  Mention the addressing modes of the following instructions and also calculate the physical address of the memory operands:          [5]  CO

    i.    MOV AX, BX