DEPARTMENT OF APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCES

MSc Data Science- (III Sem 2020-21)

18XD38 – Assembly Language Programming Lab

Problem Sheet 5

1. Write 8086 assembly language code to implement the following high-level construct. Assume all comparisons are made on signed numbers.

```
IF ((AX < 3) OR (BX < 2)) THEN
   CX = 1
ELSE
   CX = 0
ENDIF
```

2. Write a fragment of assembly code that implements the following high-level-language loop:

```
for (i=0; i < numelements - 1; i++)
        list[i] = list[i+1];
```

   You may assume that **list** (an array of 16-bit integers) and **numelements** (an integer that contains the number of elements currently in list) are defined in the program

3. Write an ALP to match the 1st character of string input with predefined passwords 1st character print "OK" when same

4. Write an ALP to find number of words, characters, number of lines and number of capital letters from the given text in the data segment

5. Write an ALP to find how many character "A" (or A/a) are in string Input.

6. Write a program to find lowest and highest number from series of number

7. Write an ALP to calculate vowels and consonants in a user given string input.

8. Write an 8086 ALP program to find the largest and smaller number from the array of numbers.
9. Write an 8086 ALP to perform the following conversions:

   a. Decimal to Binary
   b. Decimal to Hexadecimal

10. Write an 8086 ALP to ‘n’ elements in a given array in ascending order using
    a. Selection Sort
    b. Bubble Sort