**Lab Assignment-3**

**UCS 406 Data Structures and Algorithms**

Note: Use C/C++/JAVA/Python programming language.

Q1. Write a function to perform following operations on the string:

(Note: You can make single function for all operations/independent function for each problem)

1. Finding length of a string
2. Converting a string in lowercase
3. Counting number of words and vowels in a string
4. Validating a string (Note: Valid string does contain only alphabets)
5. Reversing a string (Eg. Code 🡪 edoC)
6. Checking if a string is palindrome.
7. Finding duplicate characters in a string (Note: print the duplicate characters only once, irrespective of the number of times it occurred)

Q2 Write a program for finding the factorial of a number recursively.

Q3. Implement combination formula nCr using recursion and code it in C/C++/JAVA/Python language.

Q5. Implement the Tower of Hanoi Problem using recursion and code it in C/C++/JAVA/Python language.

Q6. Implement the Fibonacci series using recursion and code it in C/C++/JAVA/Python language.