

## LAB 1

### BASIC C++ FEATURES

In this lab, students shall write and run different programs related to **structures**. Student shall also write and run different programs related to **inline function, function overloading, default arguments and DMA with new and delete** in C++ programming language. Following programs with different task number shall be covered in this lab:

#### **Task #1:**

WAP in C++ to add two complex numbers using function named 'add\_complex' which takes structure as argument. Also, display the result through 'display\_complex' function which takes argument structure type through 'add\_complex' function.

#### **Task #2:**

WAP in C++ to illustrate the concept of inline function to calculate BMI (Body Mass Index).  
[BMI = weight(in kg) / height<sup>2</sup> (in meter)]

#### **Task #3:**

WAP in C++ to illustrate the concept of default arguments while calculating total monthly fee of students . (Use default argument wherever necessary and use following data for calculation)

	Tuition fee	Transportation fee (Walkers omitted)	Lunch
Primary school	5,000	2,000	3,000
Middle school	8,000	3,000	3,000
High School	10,000	3,000	0 (Not provided)

#### **.Task #4:**

WAP in C++ to find the squares of three different data types- int, float and double. (Discuss on **ambiguity** that can arise during function overloading)

#### **Task #5:**

WAP in C++ to find the perimeter of circle, triangle and rectangle using the concept of function overloading

#### **Task #6:**

WAP in C++ to illustrate DMA with new and delete. The program should read and display set of 'N' numbers and also display its sum and average. Illustrate if 'N' can also use concept of DMA.