**LALITPUR ENGINEERING COLLEGE**

**DEPARTMENT OF COMPUTER ENGINEERING**

**SUBJECT: OBJECT ORIENTED PROGRAMMING IN C++**

**LABSHEET-3**

**Objective:** To familiarize student with constructor and destructor concepts.

**Theory:**

**Constructor** is special member function which have same name of class. It is invoked when object of its class is created. Its main function is to initialize and allocate memory.

**Destructor** is special member function which have same name of class with tilde symbol (~). It is invoked when object out of scope. It de-allocates the memory assigned to particular object.

**Syntax For Constructors and Destructors**

class example

{………..

public:

example()//Constructor Definition

{

………

}

~example() //Destructor Definition

{

…………

} };

Dynamic memory allocation is done with help of new and delete operator. new operator helps to allocate memory dynamically in C++ and delete operator deallocates / frees the memory.

Syntax: For new and delete operator

datatype var=new datatype(s);

example \*obj =new example(s);

Where example is class name

obj is object

s is the number of object or variable;

or

int \*s = new int (num);

**Programs:**

1. WAP to define a class to represent bowlers in a cricket team having data members first\_name, last\_name, overs\_bowled, number\_of\_maiden, runs\_given and wicket\_taken with constructor to initialize initial values and members function to display bowlers information.
2. Create a class **Person** with data members name, age, address and citizenship\_number, make a constructor to initialize values to data members. Assign citizenship\_number if the age of person is greater than 16 otherwise assign value 0 to citizenship number, also create a function to display the values.
3. WAP to copy complex number object to another object using copy constructor.
4. Write a program that concatenates string of two objects. The function should allocate memory dynamically.