

## Assignment-III

1. Write a generic function template to carry out linear search with the following
  - a. Demonstrate it for int, double and float data types
  - b. Use default arguments in the template function
  - c. Write an explicit specialization of the generic template for char\* data type
  - d. Demonstrate it for complex data type
2. Define a template stack class. Using this template class, create stack objects of int, float, char\* and complex type. Include exception-handling functionality.
3. Define a shape class. Derive Triangle, Square and Rectangle classes. Demonstrate the use of virtual function by including display\_area ( ) as a virtual function
4. Write 3 separate programs to demonstrate the different types of derivations, public, private and protected. Explain using appropriate comments the access of inherited members
5. Write a program to demonstrate hybrid inheritance with virtual classes using the following classes,

class person: base class

data members: name, age

class physique: derived virtually from person

data members: height, weight

class family: derived virtually from person:

data members:numChildren, religion

class employee derived from physique & family

data members: empno, salary.