



**Sinhgad Institutes**

Sinhgad Technical Educational Society's  
**SKN SINHGAD INSTITUTE of TECHNOLOGY &  
SCIENCE, LONAVALA – 410401.**

DEPARTMENT OF COMPUTER ENGINEERING

## CERTIFICATE

This is to certify that Mr. / Miss \_\_\_\_\_

Of Class **Second Year (S.E.)** Roll No. \_\_\_\_\_, Exam Seat No. \_\_\_\_\_

, has completed all the Practical work in the subject of \_\_\_\_\_

Satisfactorily in the Department of **Computer Engineering** as prescribed

by **Savitribai Phule Pune University** in the academic year 2023-2024.

**Mr.Tandale B.C**

Subject In-charge

**Dr.S.M Patil**

Head of Department

**Dr.M.S. Rohokale**

Principal

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Sr. No.	Title of Experiment	Page No.	Date	Sign
01	Write C++ program to draw a concave polygon and fill it with desired color using scan fill algorithm. Apply the concept of inheritance.			
02	Write C++ program to implement Cohen Southerland line clipping algorithm.			
03	Write C++ program to draw the following pattern. Use DDA and Bresenham's Line drawing algorithm.			
04	Write C++ program to draw 2-D object and perform following basic transformations: Scaling, Translation, Rotation. Apply the concept of operator overloading.			
05	Write C++ program to generate fractal patterns by using Koch curves.			
06	Write C++ program to draw 3-D cube and perform following transformations on it using OpenGL i) Scaling ii) Translation iii) Rotation about an axis(X/Y/Z).			
07	Implement a class Complex which represents the Complex Number data type. Implement the following 1. Constructor (including a default constructor which creates the complex number 0-0i). 2. Overload operator+ to add two complex numbers, 3. Overload operator to multiply two complex numbers. 4. Overload operators <<< and >> to print and read Complex Numbers.			
08	Develop a program in C++ to create a database of student's information system containing the following information: Name, Roll number, Class, Division, Date of Birth, Blood group, contact address, Telephone number, Driving license no, and other. Construct the database with suitable member functions. Make use of constructor, default constructor, copy constructor, destructor, static member functions, friend class, this pointer, inline code and dynamic memory allocation operators-new and delete as well as exception handling.			

09	Imagine a publishing company which does marketing for book and audio cassette versions. Create a class publication that stores the title (a string) and price (type float) of publications. From this class derive two classes: book which adds a page count (type int) and tape which adds a playing time in minutes (type float). Write a program that instantiates the book and tape class, allows user to enter data and displays the data members. If an exception is caught, replace all the data member values with zero values.			
10	Write a C++ program that creates an output file, writes information to it, closes the file, open it again as an input file and read the information from the file.			
11	Write a function template for selection sort that inputs, sorts and outputs an integer array and a float array.			
12	Write C++ program using STL. For sorting and searching user defined records such as personal records (Name, DOB, Telephone number etc) using vector container. OR Write C++ program using STL for sorting and searching user defined records such as Item records (Item code, name, cost, quantity etc) using. Vector container			