1.	Create a class called Employee which contains protected attributes such as emp_id, emp_salary and emp_da. emp_da is 20% of the emp_salary. Provide an appropriate method to take user input to initialize the attributes and display the details regarding 25 students of a class.
2.	Write a complete program to create a class called **Account** with protected attributes such as account number and balance. The attributes should be initialized through constructors. The class contains a public method named as show () to display the initialized attributes. Provide a mechanism to create an array of **Account** objects for the 30 account.
3.	Declare a C++ class "Employee" for following requirement Private empno int name char[20] salary int getsalary() to return value of salary public getdata() to read the detail showdata() to display details showofficer() to display only those who are getting salary above 20000
4.	Write a program to declare class BOX private height, width, depth public declare 1 default constructor, 1 parameterized constructor and 1 copy constructor show() to display the values Write main() function to declare an object to invoke all the constructor and show function for each object
5.	Imagine a tollbooth at a bridge. Cars passing by the booth are expected to pay a 50 cent toll. Mostly they do, but sometimes a car goes by without paying. The tollbooth keeps track of the number of cars that have gone by, and of the total amount of money collected. Model this tollbooth with a class called tollBooth. The two data items are a type unsigned int to hold the total number of cars, and a type double to hold the total amount of money collected. A constructor initializes both of these to 0. A member function called payingCar() increments the car total and adds 0.50 to the cash total. Another function, called nopayCar(), increments the car total but adds nothing to the cash total. Finally, a member function called display() displays the two totals. Make appropriate member functions const. Include a program to test this class. This program should allow the user to push one key to count a paying car, and another to count a nonpaying car. Pushing the Esc key should cause the program to print out the total cars and total cash and then exit.
6.	Create a class called time that has separate int member data for hours, minutes, and seconds. One constructor should initialize this data to 0, and another should initialize it to fixed values. Another member function should display it, in 11:59:59 format. The final member function should add two objects of type time passed as arguments. A main() program should create two initialized time objects (should they be const?) and one that isn't initialized. Then it should add the two initialized values together, leaving the result in the third time variable. Finally it should display the value of this third variable. Make appropriate member functions const.
7.	Implement a Circle class. Each object of this class will represent a circle, storing its radius and the *x* and *y* coordinates of its center as floats. Include a default constructor,access functions, an area() function, and a circumference() function.

8.	Define a class student with the following specification **Private members** of class student admno integer sname 20 character eng. math, science float total float ctotal() a function to calculate eng + math + science with float return type. **Public member** function of class student Takedata() Function to accept values for admno, sname, eng, science and invoke ctotal() to calculate total. Showdata() Function to display all the data members on the screen.
9	Write a program that defines a shape class with a constructor that gives value to width and height. The define two sub-classes triangle and rectangle, that calculate the area of the shape area (). In the main, define two variables a triangle and a rectangle and then call the area() function in this two varibles.
10	Write a program with a mother class and an inherited daugther class.Both of them should have a method void display ()that prints a message (different for mother and daugther).In the main define a daughter and call the display() method on it.
11	Create a class Person and two derived classes Employee, and Student, inherited from class Person. Now create a class Manager which is derived from two base classes Employee and Student. Show the use of the virtual base class
12	Write a program to create a class shape with functions to find area of the shapes and display the name of the shape and other essential component of the class. Create derived classes circle, rectangle and trapezoid each having overridden functions area and display. Write a suitable program to illustrate virtual functions and virtual destructor.
13	Define a class in C++ with following description: **Private Members** A data member Flight number of type integer A data member Destination of type string A data member Distance of type float A data member Fuel of type float A member function CALFUEL() to calculate the value of Fuel as per the following criteria ***Distance*** ***Fuel*** <=1000 500 more than 1000 and <=2000 1100 more than 2000 2200 **Public Members** A function FEEDINFO() to allow user to enter values for Flight Number, Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel A function SHOWINFO() to allow user to view the content of all the data members
21	Create a class called **Area** which contains a method called "find_area". Write down appropriate code to create objects named as **circle** and **rectangle** of the above class and implement **function overloading** to calculate area of a rectangle and area of a circle based upon user input.
22	Create a class called point with two integer attributes such as x and y to represent its xcoordinate and y-coordinate. Provide constructor to initialize the attributes. Provide another method named as move () which will move the coordinates only in the direction of x-axis for 10 unit at a time. Also display the new and old values of the coordinates.

23	With an appropriate example, explain the role of virtual base class in removing ambiguities in case of diamond inheritance which is a special case of multi path inheritance.
24	Create an abstract class called **Figure** which contains a pure virtual function called find_area() and a protected attribute named as area. Create two new derived classes from the above class named as **Circle** and **Square** having double type attribute named as radius and side respectively. Implement **dynamic polymorphism** to find out area of a circle and a square, and show the result.
25	Write appropriate code to overload the pre increment and post increment operators in a same program using non member operator functions.
26	Create a class called **Volume** which contains a method called "find_vol". write down appropriate code to create objects named as **sphere** and **cylinder** of the above class and implement **function overloading** to calculate volume of a sphere and cylinder based upon user input.
27	Create an abstract class called **Shape** which contains a pure function called find_vol() and a protected attribute named as volume. Create two new derived classes from the above class named as **Cube** and **Sphere** having double type attribute named as side and radius respectively. Implement **dynamic polymorphism** to find out volume of a cube and a sphere. Also display the result.

28	Suppose there is a class called X with two double type attributes. Write a c++ program to create two objects named ob 1 and ob 2 of the above class and overload the binary == operator to perform the following operation within main():
	if(ob 1== ob 2)
	cout<<"Objects are same"<<endl;
	else
	cout<<"Objects are different"<<endl;

29	Class **polygon** contains data member width and height and public method set_value() to assign values to width and height. class **Rectangle** and **Triangle** are inherited from **polygon** class. Both the classes contain public method calculate_area() to calculate the area of Rectangle and Triangle.Use base class pointer to access the derived class object and show the area calculated.
30	Write a program to create a class shape with functions to find area of and display the name of the shape and other essential component of the class. Create derived classes circle, rectangle and trapezoid each having overridden functions area and display. Write a suitable program to illustrate virtual functions
31	Write a program with Student as abstract class and create derive classes Engineering, Medicine and Science from base class Student. Create the objects of the derived classes and process them and access them using array of pointer of type base class Student.
32	Write a program to read two double type numbers from keyboard and a function to calculate the division of these two numbers. A try block to throw an exception when wrong type of data is entered and another try Block to throw an exception if the condition "division "occurs". Appropriate catch block to handle the exception thrown.
33	Write a program based on the following scenario: Each Course has course code, title and credit. A course can be taught by more than one teacher. Students can enroll for any number of courses. Each student has an ID, name, address, and academic records. A teacher has ID, name, designation. Academic records has total credit completed, CGPA. Now print at least one course, student and teacher data. Use constructor to initialize data.