M.K. INSTITUTE OF COMPUTER STUDIES, BHARUCH.

OBJECT ORIENTED PROGRAMMING & DATA STRUCTURES

SYBCA SEM-3

PRACTICAL ASSIGNMENT

- **Q.1** Define two overloaded versions of function calculating area of circle and rectangle.

Q.2 WAP to maintain Telephone directory. Program should provide menu like

1. Entry (Enter a new record)
2. Search (Search the contact no. of given name, if exists)
3. Display all entry.
4. Exit

(Use array of object)

Q.3 Create two classes DM and DB which store the value of the distances. DM stores distance in meters and centimeters and DB stores distance in feet and inches.
Write a program that can add one object of DM with another object of DB. Use a friend function to carry out the addition operation. The object that stores the result may
be a DM object or DB object, depending on the units in which the result is required.
(Use friend function)

Q.4 Create two classes c1 and c2 which contain data member of type integer. Input value in both class and swap the value of both objects. Make use of friend function.

Q.5 Create a class STRING which has character array as data member. Now overload – (minus) operator to reverse the string and to compare two strings using = = operator overloading.
Also use + operator to concate two string and use = operator to copy one string to another string.

Q.6 Create a class and overload >> and << operator.

Q.7 Write a program to prepare mark-sheet for students, where inherited classes follow following structure :

Student Class

Roll_no, Name, Standard

Marks class

m1,m2,m3 |

Result class

Show_result method

This show_result method of result class displays result of student using information of student and, marks classes. Also display additional information like marks, percentage

and class (1st, 2nd, pass and fail).

Q.8 Imagine a publishing company that markets both book and audiocassette versions of its works. Create a class publication that stores the title (a string) and

price (type float) of a publication. 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). Each of these three classes should have a getdata()function to get its data from the user at the keyboard, and a putdata() function to display its data.

Q.9 Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called

triangle and rectangle from the base shape. Add to the base class a member function getdata() to initialize base class data members and another member function disp_area()

to compute and display the area of figures. Make disp_area() as a virtual function and redefine this function in the derived classes to suit their requirements.Using these three

classes, design a program that will accept dimension of a triangle or rectangle interactively, and display the area

Area of rectangle = x * y

$$\text{Area of triangle} = \frac{1}{2} * x * y$$

Q.10 Implement Stack (Pop, Push and Display) operations.

Q. 11 Implement Queue (Simple and Circular Queue) operations.