EXPERIMENT NO-11

- **Aim** – Compute the diameter, circumference and volume of sphere using class.

- **Theory** –

Class –

i) A class is a blueprint for creating objects.
ii) It defines a set of attributes and methods that the object of the class will have.
iii) Key component of a class are as follows –

1) Class definition –

A class is defined using the 'class' keyword, followed by the name of the class.

Example – class sphere :

2) Constructor –

The constructor method is called '__init__' and is used to initialize the attribute of the class.
ii) It is executed automatically when an object is created from the class.
iii) You can define any number of parameter in the constructor to set the initial value.

3) Method -

i) Methods are function defined within a class that perform specific action on the object created from the class.

ii) They can access and manipulate the variable of the class using the 'self' keyword.

4) Object -

i) Object is an instance of a class.

ii) To create an object from a class, you can simply call the class name followed by parantheses.

Example -

obj = class _name ( )

Once you have an object, you can access its variables and call its method using dot notation.

- Class in python are used to create object that have specific attributes and behaviour.

- They help in organizing and structuring code by grouping related data and functions together.

Self Parameter –

i) Self parameter is a reference to current instance of the class, and is used to access variable that belongs to the class.

ii) It does not have to be named 'self', you can call it whatever you like, but it has to be the first parameter of any function in the class.

- ## Conclusion –

i) In conclusion, classes in python are a fundamental part of object-oriented programming.

ii) Classes promote code reusability, encapsulation, modularity and support concept like inheritance and polymorphism.

iii) They help in organizing code making it easier to manage and maintain complex programs.

iv) Overall, classes are a powerful tool that enhances flexibility of python programs.