Qno#1: Define Object Oriented Programming Language?

Object Oriented programming is a programming style which is associated with the concepts like class, object, Inheritance, Encapsulation, Abstraction, Polymorphism. An object-based application in Python is based on declaring classes, creating objects from them and interacting between these objects

There are four concepts of OOP:

1-Inheritance

2-Encapsulation

3-Polymorphism

4-Abstraction

Qno#2: List down the Benefits of OOP?

OOP offers several benefits to the program designer and the user. Object-orientation contributes to the solutions of many problem associated with the development and quality of software products.

Through inheritance, we can eliminate redundant code and extend the use of existing classes.

        We can built programs from standard working modules that communicate with one another rather than, having to start writing the code from scratch. This leads to saving of development time and higher productivity.

        The principle of data hiding helps the programmers to built secure program that can’t be invaded by code in other parts of the program.

        It is possible to have multiple objects to coexist without any interference.

        It is possible to map objects in the problem domain to those objects in the program.

        It is easy to partition the work in a project based on objects.

        The data-centered design approach enables us to capture more details of the model in an implementable form.

        Object-oriented systems can be easily upgraded from small to large system

        Message Passing Technique for communication between objects make the interface descriptions with external system much simpler.

        Software complexity can be easily managed

Qno#3: Differentiate between function and method?

**Function:**

* Functions have independent existence. You can define them outside of the class.
* Functions don't have any reference variables.
* Functions are a self describing piece of code.
* Functions are called independently.

**Method:**

* Methods do not have independent existence. They are always defined within a class, struct, or enum.
* Methods are the properties of Object-oriented language
* Methods are used to manipulate instance variable of a class.
* Methods are called using instance or object.

**Qno#4 :** Define the following terms:

1. Class

2. Object

3. Attribute

4. Behavior

1. Class:  a **class** is a template **definition** of the method s and variable s in a particular kind of object . Thus, an object is a specific instance of a **class**; it contains real values instead of variables

2. Object: **Objects** are the basic units of **object-oriented** programming. A simple **example** of an **object** would be a person.

3. Attribute:  an **attribute** is a specification that defines a property of an object, element, or file. It may also refer to or set the specific value for a given instance

4. Behavior:  A class's **behavior** determines how an instance of that class operates; for example, how it will "react" if asked to do something by another class or object or if its internal state changes. **Behavior** is the only way objects can do anything to themselves or have anything done to them.