**Assignment no.06**

Question 1:

Define Object Oriented Programming Language?

Answer: Object-oriented programming (OOP) refers to a type of computer programming (software design) in which programmers define the data type of a data structure, and also the types of operations (functions) that can be applied to the data structure.

In this way, the data structure becomes an object that includes both data and functions. In addition, programmers can create relationships between one object and another. For example, objects can inherit characteristics from other objects.

Question 2:

List down the Benefits of OOP?

1. Modularity for easier troubleshooting
2. Reuse of code through inheritance
3. Flexibility through polymorphism
4. Effective problem solving

Question 3:

Differentiate between function and method?

**FUNCTION:** A function is a piece of code that is called by name. It can be passed data to operate on (i.e. the parameters) and can optionally return data (the return value). All data that is passed to a function is explicitly passed.

**METHOD:** A method is a piece of code that is called by a name that is associated with an object. In most respects it is identical to a function except for two key differences:

* A method is implicitly passed the object on which it was called.
* A method is able to operate on data that is contained within the class (remembering that an object is an instance of a class - the class is the definition; the object is an instance of that data).

Question 4:

Define the following terms:

1. Class
2. Object
3. Attribute
4. Behavior
5. **Class:** In object-oriented programming, a class is a blueprint for creating objects (a particular data structure), providing initial values for state (member variables or attributes), and implementations of behavior (member functions or methods).
6. **Object**: In object-oriented programming (OOP), objects are the things you think about first in designing a program and they are also the units of code that are eventually derived from the process. In between, each object is made into a generic class of object and even more generic classes are defined so that objects can share models and reuse the class definitions in their code. Each object is an instance of a particular class or subclass with the class's own methods or procedures and data variables. An object is what actually runs in the computer.
7. **Attribute**: In Object-oriented programming(OOP), classes and objects have attributes. Attributes are data stored inside a class or instance and represent the state or quality of the class or instance. In short, attributes store information about the instance. Also, attributes should not be confused with class functions also known as methods.
8. **Behavior:** The behavior of an object is defined by its methods, which are the functions and subroutines defined within the object class. Without class methods, a class would simply be a structure.