Q1: Define Object Oriented Programming Language.

This language follows the principles of object-oriented programming, which is the modern approach that structure the program and uses objects containing data, which can be use as templates for creating copies of different modules when needed.

Q2: List down the benefits of OOP.

1. It has less complexity in code because the structure of program is very clear because of objects.
2. We can write code once and then use it repeatedly.
3. Modifying the code is easy because everything has its own object, so we know where to go for changes.
4. We have option to secure data by using scope of variables, which are global, local etc.

Q3: Differentiate between functions and method.

Functions have independent existence, which means they can be define outside of the class. While the methods are always the member of class which makes them dependent.

Q4: Define the following terms:

1. **Class**
2. **Object**
3. **Attribute**
4. **Behavior**

CLASS:

A class is the blueprint for creating objects and is a way of organizing information about a type of data so we can reuse elements by making multiple instances.

OBJECT:

An object is a self-contained component, which consists of methods and properties to make a particular type of data.

ATTRIBUTE:

An attribute is a property of a class, which describes the range of values that property may hold.

BEHAVIOUR:

Behavior is how the instance of the class operates or behaves when we ask it to do something. It is the external interacting features of that instance of class.

Q5: Write a code in python in which create a class named it Car, which have five attributes such like (model, color, name etc.) and three methods. In addition, create five objects instance from that class.

INPUT:

```
# class, named car
class car:

    # Five Attributes
    def __init__(self, make, model, color, releaseDate, carType):
        self.make = make
        self.model = model
        self.color = color
        self.releaseDate = releaseDate
        self.carType = carType

    # Three methods
    def start(self, car):
        print(car + "'s Engine Started")

    def stop(self, car):
        print(car + "'s Engine is switched off")

    def autoPilot(self, car):
        print(car + " is in auto-pilot mode")

# Five object instances
carA = car("BMW", "i8", "Grey", "2014", "Sports")
print(carA.start(carA.make), carA.stop(carA.make), carA.autoPilot(carA.make))
print("Make: " + carA.make + "\nModel: " + carA.model + "\nRelease Date: " +
carA.releaseDate + "\nType: " + carA.carType)

print("-------------")
```

```
carB = car("Mercedes", "S Class", "Black", "2009", "Luxury")

print(carB.start(carB.make), carB.stop(carB.make), carB.autoPilot(carB.make))

print("Make: " + carB.make + "\nModel: " + carB.model + "\nRelease Date: " +
carB.releaseDate + "\nType: " + carB.carType)


print("-------------")


carC = car("Ford", "Mustang", "White & Blue", "1998", "Sports")

print(carC.start(carC.make), carC.stop(carC.make), carC.autoPilot(carC.make))

print("Make: " + carC.make + "\nModel: " + carC.model + "\nRelease Date: " +
carC.releaseDate + "\nType: " + carC.carType)


print("-------------")


carD = car("Lamborghini", "Eventador", "Yellow", "2012", "Sports")

print(carD.start(carD.make), carD.stop(carD.make), carD.autoPilot(carD.make))

print("Make: " + carD.make + "\nModel: " + carD.model + "\nRelease Date: " +
carD.releaseDate + "\nType: " + carD.carType)


print("-------------")


carE = car("McLaren", "P1", "Orange", "2018", "Sports")

print(carE.start(carE.make), carE.stop(carE.make), carE.autoPilot(carE.make))

print("Make: " + carE.make + "\nModel: " + carE.model + "\nRelease Date: " +
carE.releaseDate + "\nType: " + carE.carType)
```

OUTPUT:

```
BMW's Engine Started
BMW's Engine is switched off
BMW is in auto-pilot mode
Make: BMW
Model: i8
Release Date: 2014
Type: Sports
-------------
Mercedes's Engine Started
Mercedes's Engine is switched off
Mercedes is in auto-pilot mode
Make: Mercedes
Model: S Class
Release Date: 2009
Type: Luxury
-------------
Ford's Engine Started
Ford's Engine is switched off
Ford is in auto-pilot mode
Make: Ford
Model: Mustang
Release Date: 1998
Type: Sports
-------------
Lamborghini's Engine Started
Lamborghini's Engine is switched off
Lamborghini is in auto-pilot mode
Make: Lamborghini
Model: Eventador
Release Date: 2012
Type: Sports
```

McLaren's Engine Started

McLaren's Engine is switched off

McLaren is in auto-pilot mode

Make: McLaren

Model: P1

Release Date: 2018

Type: Sports