

Q1.

**Explain class and object with respect to oop.
Give a suitable example**

"" An object is an instance of a class. Class – A class can be defined as a template/blueprint that describes the behavior/state that the object of its type support. Example = a mobile phone has attributes like a brand name, RAM, and functions like texting and calling. ""

Q2.

Name the four pillars of OOP

abstraction, encapsulation, inheritance, and polymorphism

Q3.

Explain why the init() function is used. Give a suitable example.

are used to initialize the attributes of that class, E.g., if the class is Person, then the attributes will be name, age, etc.

Q4.

Why self is used in OOPs?

is used to represent the instance of the class. Works as a reference to an object.

Q5.

What is inheritance? Give an example for each type of inheritance

Inheritance is a mechanism in which one class acquires the property of another class.

In [2]: *# Single inheritance*

```
class test1:
    def func1(self):
        print("This function is in parent class.")

class test2(test1):
    def func2(self):
        print("This function is in child class.")

obj = test2()
obj.func1()
obj.func2()
```

This function is in parent class.
This function is in child class.

In [3]: *# Multiple Inheritance*

```
class Mother:
    mothername = ""

    def mother(self):
        print(self.mothername)

class Father:
    fathername = ""

    def father(self):
        print(self.fathername)

class Son(Mother, Father):
    def parents(self):
        print("Father :", self.fathername)
        print("Mother :", self.mothername)

s1 = Son()
s1.fathername = "John"
s1.mothername = "Edward"
s1.parents()
```

Father : John
Mother : Edward

In [4]: *# Multilevel Inheritance*

```
class Grandfather:

    def __init__(self, grandfathername):
        self.grandfathername = grandfathername

class Father(Grandfather):
    def __init__(self, fathername, grandfathername):
        self.fathername = fathername

        Grandfather.__init__(self, grandfathername)

class Son(Father):
    def __init__(self, sonname, fathername, grandfathername):
        self.sonname = sonname

        Father.__init__(self, fathername, grandfathername)

    def print_name(self):
        print('Grandfather name :', self.grandfathername)
        print("Father name :", self.fathername)
        print("Son name :", self.sonname)

s1 = Son('Prince', 'Rampal', 'Lal mani')
print(s1.grandfathername)
s1.print_name()
```

```
Lal mani
Grandfather name : Lal mani
Father name : Rampal
Son name : Prince
```

In []: