OOP’s Assignment - Data Science Masters

Q.1 Ans-

A class is a code template for creating objects.
Objects have member variables and have behaviour associated with them.
In python a class is created by the keyword class.
An object is created using the constructor of the class.
This object will then be called the instance of the class.
Example:

```
class Snake:
    pass
snake = Snake ()
 print(snake)
```

Q.2 Ans-

Inheritance, Polymorphism, Encapsulation and Abstraction

Q.3 Ans-

The __init__ method, also known as the constructor method, is used to initialize the attributes of an object when it is created. This method is automatically called when a new object of the class is created,
and its primary purpose is to assign initial values to object attributes.
Here's an example:

```
class Person:
    def __init__(self, name, age):
        self.name = name
        self.age = age

    def say_hello(self):
        print(f"Hello, my name is {self.name} and I am {self.age} years old.")

person = Person("John Doe", 30)
person.say_hello()
```

Hello, my name is John Doe and I am 30 years old.

Q.4 Ans-

self is a reference to the instance of the class. It is used to access the attributes and methods of the class within the class definition.
When you define a method in a class, the first parameter of the method is always self, which refers to the instance of the class that is calling the method.

Q.5 Ans-

Inheritance is a feature of object-oriented programming (OOP) that allows you to create new classes based on existing classes. The new class inherits attributes and behavior from the existing class, and you can add new attributes and behavior to the new class.

Types of Inheritance –

Single , Multilevel, Multiple, Hybrid, Hierarchical