

5feb assQ

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ASSIGNMENT - 5 FEB,2023 Basics of Object oriented programming

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Q1. Explain Class and Object with respect to Object-Oriented Programming. Give a suitable example. Object is an instance of a class. All data members and member functions of the class can be accessed with the help of objects CLASS is a prototype from which object is created.

```
[14]: class student :  
    def __init__(self,student_id,standard,stu_name):  
        self.student_id = student_id  
        self.standard = standard  
        self.stu_name = stu_name  
    def student_details(self):  
        return self.student_id , self.standard , self.stu_name
```

```
[15]: pratima = student(12343,"A","Pratima")
```

```
[20]: pratima.student_details()
```

```
[20]: (12343, 'A', 'Pratima')
```

class is student while pratima is the object of student class

Q2. Name the four pillars of OOPs. The four pillars of object-oriented programming are:

Abstraction Encapsulation Inheritance Polymorphism

Q3. Explain why the **init()** function is used. Give a suitable example. The **init** function is called a constructor, or initializer. It is automatically called when you create a new instance of a class or object of that class.

```
[22]: class car:  
    def __init__(self,model_no,model_name,color):  
        self.model_no = model_no  
        self.model_name = model_name  
        self.color = color  
    def car_description(self):  
        return self.model_no ,self.model_name ,self.color
```

```
[25]: car1 = car(2011,"xyz","white")
      car1.car_description()
```

```
[25]: (2011, 'xyz', 'white')
```

Q4. Why self is used in OOPs? self represents the object of the class By using the “self” we can get the attributes and methods of the class in python. It binds the attributes with the given arguments.

Q5. What is inheritance? Give an example for each type of inheritance. Inheritance is a feature or a process in which, new classes are created from the existing classes. The new class created is called “derived class” or “child class” & the existing class is known as the “base class” or “parent class”. The derived class now is said to be inherited from the base class. Types Of Inheritance are - 1)Single inheritance 2)Multilevel inheritance 3)Multiple inheritance 4)Hierarchical inheritance 5)Hybrid inheritance