Test

Python Inheritance - Test

Part A: Multiple Choice Questions (MCQs)

Choose the correct answer for each question:

1. What is inheritance in Python?

   a) A way to restrict access to class members

   b) A way to create private variables

   c) A mechanism for creating a new class using details of an existing class

   d) A method to create multiple constructors

2. Which keyword is used to inherit a class in Python?

   a) extend

   b) include

   c) derive

   d) class Child(Parent)

3. If class B inherits from class A, which class is the base class?

   a) B

   b) A

   c) Both A and B

   d) None

4. What will be the output of the following code?

```
class A:
    def show(self):
```

```
        print("A class")

class B(A):
    pass

obj = B()
obj.show()
```

a) Error

b) Nothing

c) A class

d) B class

5. What does method overriding mean?

   a) Changing the method name in the parent class

   b) Defining a method with the same name in a child class

   c) Inheriting a private method

   d) Deleting a method from the base class

Part B: Practical Questions

1. **Create a base class `Vehicle` with a method `start_engine()` that prints "Engine started". Derive a class `Car` from it that adds a method `play_music()` which prints "Playing music". Create an object of `Car` and call both methods.**
2. **Write a class `Employee` with attributes `name` and `salary`, and a method `display()`. Create another class `Manager` that inherits from `Employee` and adds a new attribute `department`. Override the `display()` method to include the department. Create a `Manager` object and call the `display()` method.**
3. **Create a base class `Shape` with a method `area()`. Create two derived classes `Circle` and `Square` that override the `area()` method to calculate area appropriately. Instantiate both and display their areas.**
4. **Demonstrate multilevel inheritance by creating three classes: `LivingThing`, `Animal`, and `Dog`, where each inherits from the previous. Add a method in**

each class and call all of them from a `Dog` object.

5. **Create a base class `Person` with attributes `name` and `age`. Derive a class `Student` from `Person` and add `marks`. Include a method to display all information. Create an object and demonstrate inheritance.**

End of Test