Chapter-3: Classes and Objects

PART-II: SAMPLE SHORT QUESTIONS

1. What is an object?

An object is a **real-world entity** created from a class.
It has **state (data)** and **behavior (methods)**.
✓ Example: Car myCar = new Car();

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2. Create an object.

Objects are created using the new keyword.
They represent instances of a class.
✓ Example: Student s1 = new Student();

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3. What is class?

A class is a **blueprint** for creating objects.
It contains data members and methods.
✓ Example: class Student { int id; String name; }

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4. Create a class.

A class is declared with the class keyword.
It can include variables and methods.
✓ Example:

class Car { String color; void drive(){} }

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5. What is a method?

A method is a **block of code** that performs an action.
It defines the behavior of an object.
✓ Example: void display(){ System.out.println("Hello"); }

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6. Create a method.

A method is created inside a class with return type and name.
It may take parameters or return values.
✓ Example:

int sum(int a,int b){ return a+b; }

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7. Define Method Overloading.

Method overloading means having **same method name** but **different parameters**.
It increases program flexibility.
✓ Example:

int add(int a,int b); double add(double x,double y);

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8. Write Method Overloading Benefits.

- Increases **readability**.
- Allows methods with same name but different inputs.
- ✓ Example: print(int a), print(String s).

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9. Write Uses of Method Overriding.

- Used for **runtime polymorphism**.
- Allows subclass to provide its own implementation.
- ✓ Example: class Dog extends Animal { void sound(){ System.out.println("Bark"); } }

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10. Define Constructor.

A constructor is a **special method** used to initialize objects.
It has the same name as class and no return type.
✓ Example: Student(){ System.out.println("Created"); }

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11. Define access modifiers.

Access modifiers **control visibility** of classes, methods, and variables.
Types: public, private, protected, default.
✓ Example: public class Student { }

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12. Define Private Access Modifier.

Private members are **accessible only within the same class**.
Used for data hiding and encapsulation.
✓ Example: private int age;

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13. Define Protected Access Modifier.

Protected members are **accessible in same package and subclasses**.
They provide limited inheritance access.
✓ Example: protected void display(){ }

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14. What is default constructor?

A constructor with **no parameters** is called default constructor.
If not defined, Java provides one automatically.
✓ Example:

Student(){ }

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15. What are Parameterized Constructors?

Constructors that **take arguments** to initialize objects.
They allow setting initial values directly.
✓ Example: Student(int id, String name){ this.id=id; this.name=name; }

PART-III: SAMPLE LONG QUESTIONS

1. Write note on Object, Class, and Method.

- **Class**: blueprint for objects.
- **Object**: instance of class.
- **Method**: defines behavior.
  ✓ Example:

class Car{ void drive(){} } Car c=new Car();

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2. Write note on access modifiers.

Access modifiers **control scope and visibility**.
Types: public, private, protected, default.
✓ Example: public int x; private int y;.

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3. Write note on Method Overriding, Method Overloading.

- **Overloading**: same name, different parameters.
- **Overriding**: subclass provides new implementation.
  ✓ Example: void sound(){} in Animal and Dog.

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4. What is Lambda Expression?

A lambda is a **short way to write methods**.
It is mainly used with functional interfaces.
✓ Example: (a,b) -> a+b;.

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5. What is Control Access to a Member of a Class?

It means using access modifiers to **restrict access**.
Ensures encapsulation and security of data.
✓ Example: private int balance;.