



## PROGRAMMING IN JAVA

### Assignment3

TYPE OF QUESTION: MCQ

Number of questions:10

Total mark:  $10 \times 1 = 10$

#### **QUESTION 1:**

Consider the following piece of code in Java.

```
class A {  
    public int i;  
    protected int j;  
}  
class B extends A  
{  
    void display()  
    {  
        super.j = super.j - super.i ;  
        System.out.println(super.i + " " + super.j);  
    }  
}  
public class inheritance  
{  
    public static void main(String args[])  
    {  
        B obj = new B();  
        obj.i=3;  
        obj.j=6;  
        obj.display();  
    }  
}
```

**What is the output of the above program?**

- a. 2 3
- b. 3 3
- c. Runtime Error
- d. Compilation Error

**Answer: b**

**Explanation:** The java super keyword is used to refer the immediate parent class object.



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**QUESTION 2:**

**Consider the following piece of code in Java.**

```
public class Question
{
    public static int x = 7;
    public static void main(String[] args) {
        Question a = new Question ();
        Question b = new Question ();
        a.x = 2;
        b.x = 2;
        System.out.println(a.x+b.x+Question.x);
    }
}
```

**What is the output of the above program?**

- a) 6
- b) 10
- c) 21
- d) error

**Correct Answer: a**

**Detailed Solution:**

Because x is defined as a public static int in the class Question, every reference to x will have the value that was last assigned because x is a static variable (and therefore a class variable) shared across all instances of the class. That is, there is only one x: when the value of x changes in any instance it affects the value of x for all instances of Question.

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**QUESTION 3:**

If a class inheriting an abstract class does not define all of its functions then it will be known as?

- a) Default
- b) Abstract
- c) A simple class
- d) Static class

**Answer: b**

**Explanation:** Any subclass of an abstract class must either implement all of the abstract methods in the superclass or be itself declared abstract.

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**QUESTION 4:**

Which among the following best describes polymorphism?

- a) It is the ability for many messages/data to be processed in one way
- b) It is the ability for a message/data to be processed in only 1 form
- c) It is the ability for a message/data to be processed in more than one form
- d) It is the ability for undefined message/data to be processed in at least one way

**Correct Answer: c**

**Detailed Solution:** It is actually the ability for a message/data to be processed in more than one form. The word polymorphism indicates many-forms. So if a single entity takes more than one form, it is known as polymorphism.

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**QUESTION 5:**

Consider the following piece of code in Java

```
class Men
{
    int walkingDistance(int weight)
    {
        System.out.println(10);
        return 10;
    }
}
class WildMen extends Men
{
    void walkingDistance(int weight)
    {
        System.out.println("20");
    }
}
public class MethodOverriding3
{
    public static void main(String[] args)
    {
        WildMen wc = new WildMen();
        wc.walkingDistance(30);
    }
}
```

**What is the output of the above program?**

- a. 30
- b. 20
- c. Compiler error
- d. Runtime error

**Correct Answer: c**

**Detailed Solution:** If the argument list is the same, the return types can not be the incompatible-types. So, the compiler reports an error "The return type is incompatible with Cat.jumpingHeight(int)".

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**QUESTION 6:**



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**All the variables of the interface should be?**

- a) default and final
- b) default and static
- c) public, static and final
- d) protect, static and final

**Answer: c**

**Explanation:** Variables of an interface are public, static, and final by default because the interfaces cannot be instantiated, final ensures the value assigned cannot be changed with the implementing class and public for it to be accessible by all the implementing classes.

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**QUESTION 7:**

**Disadvantage(s) of inheritance in Java programming is/are**

- a) Code readability
- b) two classes (base and inherited class) get tightly coupled
- c) Code maintainability
- d) Code reusability

**Correct Answer: b**

**Explanation:**

The main advantages of inheritance are code reusability and readability. When child class inherits the properties and functionality of parent class, we need not write the same code again in child class. This makes it easier to reuse the code, makes us write the less code and the code becomes much more readable.

The main disadvantage of using inheritance is that the two classes (base and inherited class) get tightly coupled. This means one cannot be used independently of each other. Also with time, during maintenance adding new features both base as well as derived classes are required to be changed.

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**QUESTION 8:**



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**When does method overloading is determined?**

- a) At run time
- b) At coding time
- c) At compile time
- d) At execution time

**Answer: c**

**Explanation:** Overloading is determined at compile time. Hence, it is also known as compile time polymorphism.

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**QUESTION 9:**

```
public class Test1{  
    Test1() {  
        Test1 obj1 = new Test1();  
    }  
  
    public static void main(String []args) {  
        Test1 obj = new Test1();  
        System.out.println("Hello");  
    }  
}
```

**Which of the following statements is/ are true?**

- a. Output : Hello
- b. Program will compile successfully.
- c. There will be a compile-time error.
- d. The program will give a runtime error.

**Correct Answer: b, d**

**Detailed Solution:**

Constructor if you defined recursively, then it will show runtime error.

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**QUESTION 10:**

**Which of the following statement(s) is/are true?**

- a. Hiding internal data from the outside world, and accessing it only through publicly exposed methods is known as data **encapsulation**.
- b. Common behavior can be defined in a **superclass** and inherited into a **subclass** using the **extends** keyword.
- c. The term "class variable" is another name for **static field**.
- d. A local variable stores temporary state; it is declared inside a **method**.

**Correct Answer: a,b,c,d**

**Detailed Solution:** The term "class variable" is another name for **static field**.

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