



## PROGRAMMING IN JAVA

### Assignment 02

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total marks:  $10 \times 1 = 10$

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#### QUESTION 1:

Which of the following is the correct way to declare a class in Java?

- a. `public class MyClass {}`
- b. `class MyClass[] {}`
- c. `public MyClass class {}`
- d. `MyClass public class {}`

**Correct Answer:**

- a. `public class MyClass {}`

**Detailed Solution:**

The correct way to declare a class in Java is by using the `class` keyword followed by the class name and curly braces. Refer to Lecture 7 for more details.

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## **QUESTION 2:**

Consider the code given below.

```
public class VarPrint {  
    int x = 30;  
    static int y = 20;  
  
    public static void main(String[] args) {  
        VarPrint t1 = new VarPrint();  
        t1.x = 88;  
        t1.y = 99;  
        int z1 = t1.x + t1.y;  
        VarPrint t2 = new VarPrint();  
        System.out.println(t1.y + " " + t2.y + " " + z1);  
    }  
}
```

What will be the output of the above Java program?

- a. 30 99 178
- b. 30 88 129
- c. 30 99 187
- d. 99 99 187

**Correct Answer:**

- d. 99 99 187

**Detailed Solution:**

If you perform any change for instance variable these changes won't be reflected for the remaining objects. Because for every object a separate copy of instance variable will be there. But if you do any change to the static variable, that change will be reflected for all objects because a static instance maintains a single copy in memory.

***Please refer to chapter 3 of book Joy With Java for a more detailed explanation.***

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### **QUESTION 3:**

Consider the code given below.

```
public class ArgumenTest {  
    public static void main(String[] args) {  
        Test t = new Test();  
        t.start();  
    }  
  
    static class Test {  
        void start() {  
            int a = 4;  
            int b = 5;  
            System.out.print("" + 8 + 3 + "");  
            System.out.print(a + b);  
            System.out.print(" " + a + b + "");  
            System.out.print(foo() + a + b + " ");  
            System.out.println(a + b + foo());  
            System.out.print(a + b);  
        }  
  
        String foo() {  
            return "foo";  
        }  
    }  
}
```

What will be the output of the code given above?

- a. 9 7 7 foo34 34foo
- b. 839 45foo45 9foo
- c. 72 34 34 foo34 34foo
- d. 839 45foo45 9foo9

Correct Answer:

- d. 839 45foo45 9foo9

Detailed Solution:



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Here, `print()` methods internally converts the data in its argument into a String object and then print the composition. Here, `+` is the concatenation of different String representation.

***Please refer to chapter 3 of book Joy With Java for a more detailed explanation.***

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**QUESTION 4:**

Which keyword is used in Java to refer to the current object?

- a. that
- b. self
- c. current
- d. this

**Correct Answer:**

- d. this

**Detailed Solution:**

In Java, the `this` keyword is used to refer to the current object within an instance method or a constructor. Refer to Lecture 8 for more details.

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### **QUESTION 5:**

Which of the following is true about constructors in a class?

- a. Constructors do not have a return type.
- b. Constructors aren't used to initialize objects.
- c. A class can have only one constructor.
- d. Constructors cannot be overloaded.

**Correct Answer:**

- a. Constructors do not have a return type.

**Detailed Solution:**

A constructor is a special method in a class that is automatically called when an object of the class is created. Its main purpose is to initialize the object's properties (variables). Unlike other methods, constructors:

- Have the same name as the class.
- Do not have a return type, not even `void`. A class can have multiple constructors with different parameter lists (constructor overloading) to allow flexibility in object creation.

**Please refer book Joy with Java Chapter 3 for more detailed explanation.**

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### **QUESTION 6:**

Consider the following code snippet

```
class NPTEL_W2 {  
    int x;  
  
    NPTEL_W2(int x) {  
        this.x = x;  
    }  
  
    void printX() {  
        System.out.println(this.x);  
    }  
  
    public static void main(String[] args) {  
        NPTEL_W2 obj = new NPTEL_W2(100);  
        obj.printX();  
    }  
}
```

What will be the output of the code given above?

- a. 0
- b. 10
- c. 100
- d. Runtime error

**Correct Answer:**

- c. 100

**Detailed Solution:**

The constructor `NPTEL_W2 (int x)` initializes the instance variable `x` with the value passed as an argument. The method `printX()` prints the value of `x`, which is `100`. Refer to Lecture 7 for more details.



### **QUESTION 7:**

Consider the code snippet give below.

(\n in output is to be assumed to be the new line character)

```
public class Main {  
    public static void main(String[] args) {  
        System.out.print("Hello ");  
        System.out.println("World");  
        System.out.println("Number: %d", 10);  
    }  
}
```

What will be the output of the code given above?

- a. Hello World\nNumber: 10
- b. Hello WorldNumber: 10
- c. Hello \nWorld\nNumber: 10
- d. Hello World\nNumber: 10\n

**Correct Answer:**

- d. Hello World\nNumber: 10\n

**Detailed Solution:**

The `print` method prints text without a newline, `println` prints text with a newline, and `printf` prints formatted text. The output is `Hello World` on the first line and `Number: 10` on the second line. Refer to Lecture 10 for more details.

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### **QUESTION 8:**

Which class is used in Java to take runtime data input from the user?

- a. `BufferedReader`
- b. `UserInputStreamReader`
- c. `Scanner`
- d. `DataInputStreamReader`

**Correct Answer:**

- c. `Scanner`

**Detailed Solution:**

The `Scanner` class is used to take runtime data input from the user. It provides methods to read various types of input such as strings, integers, and floating-point numbers. Refer to Lecture 9 for more details.

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### **QUESTION 9:**

How do you read a line of text from the console using the Scanner class in Java?

- a. `scanner.readLine()`
- b. `scanner.nextLine()`
- c. `scanner.getLine()`
- d. `scanner.fetchLine()`

**Correct Answer:**

- b. `scanner.nextLine()`

**Detailed Solution:**

The `nextLine()` method of the Scanner class reads a line of text from the console. Refer to Lecture 10 for more details.

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### **QUESTION 10:**

What is the correct signature of the `main` method in Java?

- a. `public void main(String args[])`
- b. `public static void main(String[] args)`
- c. `void main(String[] args)`
- d. `public static void main(String args[])`

**Correct Answer:**

- b. `public static void main(String[] args)`

**Detailed Solution:**

The `main` method in Java must be declared as `public static void main(String[] args)` to be recognized by the JVM as the entry point of the program. The `public` modifier allows the method to be accessible from anywhere, `static` ensures it can be called without creating an instance of the class, and `String[] args` is the parameter used for command-line arguments.

Note: Please refer to the book Joy with Java Chapter 3 for more detailed explanation.

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