**JAVA**

**Assignment-1**

**Submission Date :**

**Topics :**

1. **Introduction to JAVA :**

Java Introduction , History and goals of java , fundamentals of OOPs, Overview of JDK , JVM , Garbage Collection.

1. **Java Basics :** Identifiers, Keywords, Java Data Types & Operators.

**Multiple Choice Questions**

* 1. **Which year was Java initially released?** 
     1. 1991 B) 1995 C) 2000 D) 2005
  2. **Which of the following was NOT a primary goal in the creation of Java?** 
     1. Platform independence B) Performance optimization

C) Network mobility D) Simplified syntax for web development

1. **What is the principle of OOP that combines data and methods that operate on the data into a single unit?**

A) Inheritance B) Polymorphism C) Encapsulation D) Abstraction

1. **Which component of Java is responsible for converting bytecode into machine specific code?**

A) JDK B) JRE C) JVM D) JCL

1. **Which garbage collector algorithm is the default for most Java applications?** A) Serial GC B) Parallel GC C) CMS (Concurrent Mark-Sweep) GC

D) G1 (Garbage-First) GC

1. **Which of the following is a valid Java identifier?**

A) 123Java B) $java\_123 C) java-123 D) class

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**8. Which of the following is NOT a primitive data type in Java?**

A) byte B) int C) String D) char

**9. What will be the output of the following code?**

|  |
| --- |
| int x = 10; x = x++ + ++x;  System.*out*.println(x); |

A) 20 B) 21 C) 22 D) 23

**10.Who is known as the father of Java?**

A) Bill Gates B) James Gosling C) Bjarne Stroustrup D) Guido van Rossum

1. **Which tool within the JDK is used for compiling Java code?** 
   1. java B) javac C) javadoc D) jdb
2. **What is the output of the following code?**

|  |
| --- |
| int a = 5; int b = 2; double c = a / b;  System.*out*.println(c); |

* 1. 2.5 B) 2.0 C) 2 D) Compilation error

1. **What will be the output of the following code snippet?**

public class Test { public static void main(String[] args) { int a = 5; int b = 10; int c = 15; int result = a++ + --b \* ++c; System.*out*.println(result);

}}

* 1. 149 B) 145 C) 155 D) 160

1. **What will be the output of the following code?**

|  |
| --- |
| double d = 10.5; int i = (int) d; float f = i;  System.*out*.println(f); |

* 1. 10.5 B) 10.0 C) 10 D) 0.0

1. **Which keyword is used to define a constant in Java?** 
   1. const B) final C) static D) constant
2. **What will be the output of the following code snippet?**

int a = 5 + 2 \* 4 - 3; System.*out*.println(a);

* 1. 9 B) 10 C) 13 D) 14

1. **What will be the output of the following code?**

int a = (5 + 2) \* (4 - 3);

System.*out*.println(a);

* 1. 7 B) 8 C) 14 D) 21

1. **What will be the output of the following code?**

int a = 5; int b = ++a \* 2;

System.*out*.println(b);

* 1. 10 B) 11 C) 12 D) 13

1. **What will be the output of the following code?**

int a = 10;

int b = 5;

int c = a / b + a \* b - a % b;

System.*out*.println(c);

* 1. 53 B) 54 C) 55 D) 56

1. **What will be the output of the following code?**

|  |
| --- |
| int a = 2; int b = 3; int c = 4;  int result = a + b \* c / a - b;  System.*out*.println(result); |

* 1. 3 B) 4 C) 5 D) 6

1. **What will be the output of the following code?**

|  |
| --- |
| boolean a = true; boolean b = false;  boolean result = a && b || a && !b;  System.*out*.println(result) |

* 1. true B) false C) Compilation error D) Runtime error

1. **What will be the output of the following code?**

|  |
| --- |
| **int a = 10; int b = 5;**  **int result = a > b ? a - b : b - a;**  **System.*out*.println(result);;** |

* 1. 5 B) -5 C) 0 D) 15

1. **What will be the output of the following code?**

|  |
| --- |
| int a = 1, b = 2, c = 3; a = b = c;  System.*out*.println(a + " " + b + " " + c); |

* 1. 1 2 3 B) 3 3 3 C) 1 1 1 D) Compilation error

1. **What will be the output of the following code?**

int a = 1; int b = 2; int c = 3;

int result = a + b \* c / a - c % b;

System.*out*.println(result);

* 1. 7 B) 5 C) 3 D) 4

1. **What will be the output of the following code?**

int a = 5;

boolean result = (a < 10) && (a++ > 5); System.*out*.println(result + " " + a);

* 1. true 5 B) false 6 C) true 6 D) false 5

1. **Which of the following is CORRECT about Java programs?**

1. Compile often,runonce
2. Write Once,compile anywhere
3. Writeoften,compile anywhere
4. Compile Once,run anywhere

**27.**  **In traditional programming languages, if a program has been compiled for Intel x86 + Windows combination, what should be done to make the program work on Intel x86 + Linux combination?**

1. The program should be rewritten
2. The program should be recompiled
3. The program should be reassembled
4. No need to do anything, the same program would work on the new combination

1. **At what stage does byte code get converted into machine language instructions?**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| (1) during compilation |  | (2) during assembly |
| (3) during preprocessing |  | (4) during execution |
|  |  |  |
|  |  |  |

1. **Java is**

(1) microprocessor-independent language (2) platform-independent language

(3) OS-independent language (4) library-independent language

**30. For the same Java program to run on different devices we need**

(1) appropriate JVM for those devices (2) appropriate compiler for those devices

(3) appropriate interpreter for those devices (4) appropriate preprocessor for those devices

**31. If we are to merely execute a Java program on a machine, then which of the following must be installed on that machine?**

(1) JVM (2) JRE (3) JDK (4) JavaAPI

**32. Which of the following statement is CORRECT ?**

1. Different microprocessor use same instruction sets
2. Different platforms use same JVM
3. To execute a Java program we need to install JDK
4. To execute a Java program we need to instal lJRE

**Write in your own words :**

1. Why programs written for Linux on a x86 machine do not work on a Windows x86 machine?
2. If on a machine we wish to develop as well as execute Java programs, should we install JDK or JRE?
3. Why are programs written in Java considered to be more portable than those written in C and C++?
4. What were the pain points that led to creation of Java Language?

**5.**What are the different components of the Java environment?