

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3664

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Unique Paper Code : 6202451202

Name of the Paper : Programming In Java

Name of the Course : B.VOC Software Development

Semester : II

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. The paper has **two** sections. **Section A (15 Marks)** is compulsory.
3. Attempt any **three** questions from **Section B**. Each question is of **15** marks.

Section A

- 1 a) Create a java program to display "Welcome World" using Class, Object and Method. 2
- b) Fill in the blanks: 3
 - i. The keyword used to create an object is _____.
 - ii. The keyword used to refer to the current object is _____.
 - iii. If no constructor is defined in a class, Java automatically provides a _____ constructor.
- c) What enables a Java program to run on different operating systems without recompilation? 2
- d) What is the difference between JDK, JRE and JVM? Explain with the help of a diagram. 4
- e) Write a Java program using AWT to create three radio buttons (Male, Female, Other) using CheckboxGroup. 4

Section B

- 2 a) Explain the purpose of the File class in Java. Write a Java program that performs basic file operations such as creating a file, writing data to the file, reading data from the file, and deleting the file. 10

P.T.O.

- b) Specify the following statements are True/False . 5
- i. Java supports multiple inheritance through classes.
 - ii. The superclass of all classes in Java is Object
 - iii. The main() method in Java can be overloaded.
 - iv. Method overloading can be achieved by changing only the return type of a method.
 - v. AWT is heavy weight and SWING is light weight.

- 3 a) What will be the output of following codes: 10
CODE 1:

```
class Vehicle {
    String type = "4W";
    int maxSpeed = 100;
    Vehicle(String type, int maxSpeed) {
        this.type = type;
        this.maxSpeed = maxSpeed;
    }
    Vehicle() { }
}

class Car extends Vehicle {
    String trans;
    Car(String trans) {    // line n1
        this.trans = trans;
    }
    Car(String type, int maxSpeed, String trans) {
        super(type, maxSpeed); // line n2
        this.trans = trans;
    }
}
```

And given the code fragment:

```
Car c1 = new Car("Auto");
Car c2 = new Car("4W", 150, "Manual");
System.out.println(c1.type + " " + c1.maxSpeed + " " + c1.trans);
System.out.println(c2.type + " " + c2.maxSpeed + " " + c2.trans);
What is the result?
```

CODE 2 :

```
public static void main(String[] args) {
    StringBuilder sb = new StringBuilder("Java");
    String s = "Java";
    if (sb.toString().equals(s.toString())) {
        System.out.println("Match 1");
    }
    else if (sb.equals(s)) {
        System.out.println("Match 2");
    }
}
```

```

    else {
        System.out.println("No Match");
    }
}

```

What is the result?

CODE 3 :

```

public class Test
{
    public int aMethod()
    {
        static int i = 0;
        i++;
        return i;
    }
    public static void main(String args[])
    {
        Test test = new Test();
        test.aMethod();
        int j = test.aMethod();
        System.out.println(j);
    }
}

```

- b) Write a Java program that demonstrates how multiple constructors are executed when objects are created with different arguments. 5
- 4 a) What is the difference between built-in and user-defined packages in Java? Write a Java program to create a package student containing a class Student with attributes (name, roll number, marks) and a method to display the details. Use this package in another program. 10
- b) Write a Java program that performs the following string operations: 5
- i. Reverses a given string.
 - ii. Converts the string to uppercase and lowercase.
- 5 a) Differentiate between method overloading and method overriding. Write a Java program where a base class Animal has a method sound(), and a derived class Dog overrides the method. Also, demonstrate method overloading by defining two versions of the sound() method (one that takes no parameters and one that takes an integer parameter). 10
- b) Describe the use of following keywords in java with code snippet (any two): 5
- i. Super
 - ii. Break
 - iii. Swings
 - iv. Abstract

- 6 a) Which inheritance is not supported by JAVA. How that unsupported inheritance can be attained indirectly? Write a program for the same. 10
- b) Write a Java program that illustrates the concept of multiple exception handling. The program should accept user input and handle the following exceptions using appropriate try-catch blocks: 5
- i. Null Pointer Exception (when accessing methods on a null object)
 - ii. String Index Out Of Bounds Exception (when accessing an invalid index in a string)
 - iii. Input Mismatch Exception (when the user enters input of the wrong data type)