Slip No. 24 (Total Marks: 30)

1.

```
java
Copy code
import java.util.function.Function;

public class Cube {
    public static void main(String[] args) {
        Function<Integer, Integer> cubFunction = (n) -> n * n * n;

        int n = 5;
        int cube = cubFunction.apply(n);
        System.out.println("The cube of " + n + " is: " + cube);
    }
}
```

2.

```
java
Copy code
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class SimpleCalculator extends JFrame implements ActionListener {
    JTextField display;
    JButton[] numButtons = new JButton[10];
    JButton addButton, subButton, mulButton, divButton, equalButton,
clearButton;
    double num1 = 0, num2 = 0, result = 0;
    char operator;

    public SimpleCalculator() {
        display = new JTextField();
        display.setBounds(30, 40, 280, 30);
        add(display);

        String[] buttonLabels = { "1", "2", "3", "4", "5", "6", "7", "8",
"9", "0" };
        int x = 40, y = 100;
        for (int i = 0; i < 10; i++) {
            numButtons[i] = new JButton(buttonLabels[i]);
            numButtons[i].setBounds(x, y, 50, 40);
            numButtons[i].addActionListener(this);
            add(numButtons[i]);
            x += 60;
            if (i % 3 == 2) {
                x = 40;
                y += 50;
            }
        }

        addButton = new JButton("+");
```

```
        subButton = new JButton("-");
        mulButton = new JButton("*");
        divButton = new JButton("/");
        equalButton = new JButton("=");
        clearButton = new JButton("C");

        addButton.setBounds(230, 100, 50, 40);
        subButton.setBounds(230, 150, 50, 40);
        mulButton.setBounds(230, 200, 50, 40);
        divButton.setBounds(230, 250, 50, 40);
        equalButton.setBounds(40, 300, 120, 40);
        clearButton.setBounds(180, 300, 100, 40);

        add(addButton);
        add(subButton);
        add(mulButton);
        add(divButton);
        add(equalButton);
        add(clearButton);

        addButton.addActionListener(this);
        subButton.addActionListener(this);
        mulButton.addActionListener(this);
        divButton.addActionListener(this);
        equalButton.addActionListener(this);
        clearButton.addActionListener(this);

        setLayout(null);
        setSize(350, 400);
        setVisible(true);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

    public void actionPerformed(ActionEvent e) {
        for (int i = 0; i < 10; i++) {
            if (e.getSource() == numButtons[i]) {
                display.setText(display.getText() + i);
            }
        }

        if (e.getSource() == addButton) {
            num1 = Double.parseDouble(display.getText());
            operator = '+';
            display.setText("");
        }

        if (e.getSource() == subButton) {
            num1 = Double.parseDouble(display.getText());
            operator = '-';
            display.setText("");
        }

        if (e.getSource() == mulButton) {
            num1 = Double.parseDouble(display.getText());
            operator = '*';
            display.setText("");
        }
```

```
        if (e.getSource() == divButton) {
            num1 = Double.parseDouble(display.getText());
            operator = '/';
            display.setText("");
        }

        if (e.getSource() == equalButton) {
            num2 = Double.parseDouble(display.getText());

            switch (operator) {
                case '+':
                    result = num1 + num2;
                    break;
                case '-':
                    result = num1 - num2;
                    break;
                case '*':
                    result = num1 * num2;
                    break;
                case '/':
                    result = num1 / num2;
                    break;
            }

            display.setText(String.valueOf(result));
        }

        if (e.getSource() == clearButton) {
            display.setText("");
        }
    }

    public static void main(String[] args) {
        new SimpleCalculator();
    }
}
```