Slip No. 23 (Total Marks: 30)

1.

```
java
Copy code
import java.util.Scanner;

class Rectangle {
    int length, breadth;

    public Rectangle(int length, int breadth) {
        this.length = length;
        this.breadth = breadth;
    }

    public int calculateArea() {
        return length * breadth;
    }

    public int calculatePerimeter() {
        return 2 * (length + breadth);
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int length = sc.nextInt();
        int breadth = sc.nextInt();
        Rectangle rectangle = new Rectangle(length, breadth);

        System.out.println("Area: " + rectangle.calculateArea());
        System.out.println("Perimeter: " + rectangle.calculatePerimeter());
    }
}
```

2.

```
java
Copy code
class InvalidDateException extends Exception {
    public InvalidDateException(String message) {
        super(message);
    }
}

class MyDate {
    int day, month, year;

    public MyDate(int day, int month, int year) throws InvalidDateException {
        if (!isValidDate(day, month, year)) {
            throw new InvalidDateException("Invalid Date: " + day + "/" +
month + "/" + year);
        }
        this.day = day;
        this.month = month;
```

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        this.year = year;
    }

    public static boolean isValidDate(int day, int month, int year) {
        if (month < 1 || month > 12) return false;
        if (day < 1 || day > 31) return false;
        if ((month == 4 || month == 6 || month == 9 || month == 11) && day >
30) return false;
        if (month == 2) {
            boolean leap = (year % 4 == 0 && year % 100 != 0) || (year % 400
== 0);
            return day <= (leap ? 29 : 28);
        }
        return true;
    }

    public void display() {
        System.out.println("Date: " + day + "/" + month + "/" + year);
    }

    public static void main(String[] args) {
        try {
            MyDate date = new MyDate(29, 2, 2021);
            date.display();
        } catch (InvalidDateException e) {
            System.out.println(e.getMessage());
        }
    }
}
```