

Slip 11

10 Marks:

```
class Rectangle {
    int length, breadth;

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

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

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

    public static void main(String[] args) {
        Rectangle rect = new Rectangle(5, 10);
        System.out.println("Area: " + rect.area());
        System.out.println("Perimeter: " + rect.perimeter());
    }
}
```

20 Marks:

```
package SY;

import java.util.Scanner;

public class SYMarks {
    public int ComputerTotal, MathsTotal, ElectronicsTotal;

    public void get() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Computer Total, Maths Total, and Electronics Total out of 200:");
        ComputerTotal = sc.nextInt();
        MathsTotal = sc.nextInt();
        ElectronicsTotal = sc.nextInt();
    }
}

java
Copy code
package TY;

import java.util.Scanner;

public class TYMarks {
    public int Theory, Practicals;

    public void get() {
```

```

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Theory marks out of 400 and Practicals
marks out of 200:");
        Theory = sc.nextInt();
        Practicals = sc.nextInt();
    }
}

import SY.SYMarks;
import TY.TYMarks;

import java.util.Scanner;

class Student {
    int rollNumber;
    String name;
    SYMarks syMarks;
    TYMarks tyMarks;
    float total;
    String grade;

    public void getDetails() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Roll Number and Name:");
        rollNumber = sc.nextInt();
        sc.nextLine(); // consume newline
        name = sc.nextLine();
    }

    public void calculateTotal() {
        total = syMarks.ComputerTotal + tyMarks.Theory;
        calculateGrade();
    }

    private void calculateGrade() {
        float percentage = (total / 600) * 100;
        if (percentage >= 70) grade = "A";
        else if (percentage >= 60) grade = "B";
        else if (percentage >= 50) grade = "C";
        else if (percentage >= 40) grade = "Pass";
        else grade = "Fail";
    }

    public void display() {
        System.out.println(rollNumber + "\t" + name + "\t" + total + "\t" +
grade);
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of students:");
        int n = sc.nextInt();
        Student[] students = new Student[n];
    }
}

```

```
for (int i = 0; i < n; i++) {
    students[i] = new Student();
    students[i].getDetails();
    students[i].syMarks = new SYMarks();
    students[i].tyMarks = new TYMarks();
    students[i].syMarks.get();
    students[i].tyMarks.get();
    students[i].calculateTotal();
}

System.out.println("RollNo\tName\tTotal\tGrade");
for (Student student : students) {
    student.display();
}
}
```