Lab Program-2

1) Algorithm

```
class Student {
    String usn
    String name
    int credits[5], marks[5]
    void input() {
        input usn, name, credits, marks
    }
int calculate {
    int x=0;
    for (int i=0 to 4)
        x+ = credits[i] * marks[i];
    return x
}
```

```
void main () {
 Student std = new Student ();
 std.input ();
 int tot = std.calculate; int s = 0
 for (int i = 0 to 4)
    st = credits [i]
 tot = double sgpa = tot / s;
 print ("Sgpa is" + sgpa)
 }
}
exit
```

② Program -

```
import java.util.*;
class Student {
  String usn, name;
  static int credits [];
  static double marks [];
  void input (int n) {
    Scanner sc = new Scanner (System.in);
    System.out.println ("Enter usn and name");
    usn = sc.nextLine ();
    name = sc.nextLine ();
    System.out.println ("Enter marks with credits");
    for (int i=0; i<n; i++) {
      marks [i] = sc.nextDouble ();
      credits [i] = sc.nextInt ();
      System.out.println ();
    }
  }
double calculate (int n) {
  int c, cred = 0;
  double tot, total = 0.0;
```

```
for (int i=0; i<n; i++) {
    tot = marks[i];
    if (tot >=90)
        c=10;
    else if (tot >= 80)
        c=9;
    else if (tot >=70)
        c=8;
    elseif (tot >=60)
        c=7;
    else if (tot >=50)
        c=6;
    elseif (tot >=40)
        c=4;
    else
        c=0;
    total = total + (c * credits[i]);
    cred = cred + credits[i];
}
total = total/cred;
return total;
}
void display (int n, double total) {
System.out.println("name of student: "+name);
System.out.println("usn of student :"+usn);
System.out.println("marks of student along with
                    credits of the course");
for (int i=0; i<n; i++) {
  System.out.println(marks[i]+" "+credits[i]);
}
System.out.println("sgpa of student : "+total);
}
```

```
void main () {
Scanner sc = new Scanner (System.in);
Student ob = new Student ();
System.out.println ("Enter number of courses");
int n = sc.nextInt ();
credits = new int [n];
marks = new double [n];
ob.input (n);
double total = ob.calculate (n);
obj.display (n, total);
}
}
```

③ Expected Output -

```
Enter number of courses
5
Enter usn and name
1BM19CS123
Prithviraj
Enter marks with credits
90  4
90  3
90  4
93  4
90  5
Name of student : Prithviraj
USN of student : 1BM19CS123
Marks of student along with credits of student
90  4
90  3
90  4
93  4
```

90 5

Sgpa of student : 10.0000

```
import java.util.*;
class quad{
public static void main(String args[]){
double a,b,c,d,x,y;
Scanner in = new Scanner(System.in);
System.out.println("Enter the coefficients of x^2, x, and constant term");
a=in.nextDouble();
b=in.nextDouble();
c=in.nextDouble();
d=b*b-4*a*c;
if(d>0){
x=(-b+Math.sqrt(d))/2*a;
y=(-b-Math.sqrt(d))/2*a;
System.out.println("Roots are real and distinct");
System.out.println("Roots are "+x+" and "+y);
}
else if(d==0){
x=y=-b/2*a;
System.out.println("Roots are real and equal");
System.out.println("Roots are "+x+" and "+y);
}
else if(d<0){

System.out.println("There are no real solutions");

}
}
}
```

```
 Enter the coefficients of x^2, x, and constant term
1
2
1
Roots are real and equal
Roots are -1.0 and -1.0
```