# LAB PROGRAM – 4

Q. Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea( ). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea( ) that prints the area of the given shape.

```
abstract class shape
{
double a,b;

shape(int x, int y)
{
  a=x;
  b=y;
}

abstract void printArea();
}
class rectangle extends shape{
rectangle(int x, int y)
{
super(x,y);
}
void printArea()
{
  System.out.println("Area of rectangle is" +(a*b));
}
}

class triangle extends shape{
triangle(int x, int y)
{
super(x,y);
}
void printArea()
{
  System.out.println("Area of triangle is" +(0.5*a*b));
}
}

class circle extends shape{
circle(int x, int y)
{
```

```
super(x,y);
}
void printArea()
{
  System.out.println("Area of circle is" +(3.14*a*a));
}
}

class shapearea{
public static void main(String args[])
{
 rectangle r1= new rectangle(18,28);
 triangle t1= new triangle(15,16);
 circle c1= new circle(8,0);

  shape r;
  r=r1;
  r.printArea();
r=t1;
  r.printArea();
r=c1;
  r.printArea();
}
}
```

Program – 4 Develop a java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named rectangle, triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of given shape.

```
abstract class Shape {
double a,b;
Shape(int x, int y)
{
 a=x;
 b=y;
}
abstract void printarea();
}
class rectangle extends Shape{
rectangle (int x, int y)
{
super (x,y);
}void printarea ()
{
 System.out.println("Area of rectangle is "+(a*b));
}
}
class triangle extends Shape {
 triangle (int x, int y)
{
super (x,y);
}
 void print Area()
{
System.out.println("Area of triangle is "+(0.5*a*b));
}
}
class circle extends Shape {
circle (int x, int y)
{
super (x,y);
}
void print Area()
{
System.out.println("Area of circle is"+(3.14*a*a));
}
}
class Shapearea {
public static void main(String args[])
{
 rectangle r1 = new rectangle (10,20);
 triangle t1 = new triangle(5,10);
 circle c1 = new Circle (3,0);
 Shape s;
 s=r1;
 s.print Area();
 s = t1;
 s.print Area();
 s=c1;
 s.print Area();
}
}
```

Output:

```
Area of rectangle is 200.0
Area of triangle is 25.0
Area of circle is 28.2599
```

```
Area of rectangle is504.0
Area of triangle is120.0
Area of circle is200.96
```