**Question -1 5**

Write the output of the following question

class Shapes {

static double area = 0;

public double area() {

System.out.println("Shapes area = " + area);

return area;

}

public void area(int r) {

System.out.println("Circle area = " + 3.14 \* r \* r);

area = 3.14 \* r \* r;

}

public void area(double b, double h) {

System.out.println("Triangle area=" + 0.5 \* b \* h);

area = 0.5 \* b \* h;

}

public void area(int l, int b) {

System.out.println("Rectangle area=" + l \* b);

area = l \* b;

}

}

class Main {

public static void main(String[] args) {

Shapes myShape = new Shapes();

myShape.area();

myShape.area(6, 2);

double area=myShape.area();

myShape.area(6.0, 1.2);

myShape.area(5);

myShape.area();

System.out.println("This is the final area : "+area);

}

}

**Question -2 8+7**

Design an abstract class named 'Test' with a method 'runTest()' and a field 'testName'. Implement two concrete subclasses, 'UnitTest' and 'IntegrationTest,' which inherit from the 'Test' class. Each subclass should provide its own unique implementation of the 'runTest()' method. Additionally, include a constructor in each subclass to set the 'testName' field.

Demonstrate how inheritance and polymorphism work in this scenario by creating instances of both 'UnitTest' and 'IntegrationTest' and invoking their 'runTest()' methods. Explain how the abstract class 'Test' helps organize and structure the common behavior shared by the subclasses, and how it allows you to use objects of both subclasses interchangeably.