# COMSATS Institute of Information Technology

**Department of Computer Science**

**Object Oriented Programming (Spring 2021)**

**Sessional -2**

**Instructor**: Dr.Mukhtar Azeem, Ms. Nusrat Shaheen, Ms. Saneeha Aamir **Course Title:** OOP

**Date: 3,** May, 2021 **Time Allowed:** 45 min **Total Marks**: 20

**-----------------------------------------------------------CLO2---------------------------------------------------------------**

1. Design the following class hierarchy.
   1. A **GeometricObject** represents a general geometric figure. It has properties:
      1. isFilled
      2. color
      3. thickness.
   2. **Rectangle** and **Circle** are geometric objects. Add suitable data and methods.
   3. **Drawing** is a collection of geometric objects. Number of geometric objects can be 5. User should be able to calculate **total area** of Drawing and **count the shapes which are filled**.

**-----------------------------------------------------------CLO3---------------------------------------------------------------**

1. Consider the class hierarchy of question 1 and create a system by considering the runner provided.

public static void main(String[] args) {

// TODO code application logic here

Circle c1 = new Circle (true,"Blue",2.5,5);

Circle c2 = new Circle (false,"red",1.5,10);

Rectangle r1 = new Rectangle(true,"Blue",2.5,4,5);

Rectangle r2 = new Rectangle(false,"red",3.6,6,5);

Rectangle r3 = new Rectangle(true,"green",4.5,1,5);

Drawing d = new Drawing();

d.add(c1);

d.add(c2);

d.add(r1);

d.add(r2);

d.add(r3);

System.out.println("Total Area of Drawing is " + d.calculateArea());

System.out.println("Number of Filled Figures in the drawing is "+d.countFilled());

}

Output of above runner is :

