|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **RIPHAH INTERNATIONAL UNIVERSITY, LAHORE CAMPUS** | | | | |
|  | **Course:** | **Object Oriented Programming 2B** | **Exam:** | **Quiz 2** |
| **Duration:** | **10 mins** | **Semester:** | **Spring 2024** |
| **Date:** | **19- March - 2024** | **Marks:** | **10** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Name:**  **Instruction/Notes:** | **Sap Id. Instructor: Ayesha Majid**  **READ ALL THE INSTRUCTIONS CAREFULLY.**   1. Attempt all the questions. It is advisable to go through the paper once before starting with the first question. 2. No leniency on Cheating | | | |

**QUIZ 2**

Create a Java program to calculate and display the area of different shapes: Circle, Rectangle, and Triangle. Use inheritance and method overriding to achieve this.

1. Create a Shape class with a method ***calculateArea()*** that returns 0.

***2.***Create a Circle class that inherits from Shape and overrides the ***calculateArea()*** method to calculate and return the area of a circle using the formula: ***π \* r^2.***

3. Create a Rectangle class that inherits from Shape and overrides the **calculateArea()** method to calculate and return the area of a rectangle using the formula: length \* width.

4. Create a Triangle class that inherits from Shape and overrides the **calculateArea()** method to calculate and return the area of a triangle using the generalized formula

5. In your main program, create objects of each shape type, set their respective dimensions (e.g., radius for a circle, length and width for a rectangle, base and height for a triangle) within their respective Class, and call their calculateArea() methods to calculate and display their areas.