Mid Exam.pdf

To evaluate the midterm exam questions and their solutions, I'll first analyze the taxonomy levels of the questions, compare them with the provided Course Learning Outcomes (CLOs) and Bloom's Taxonomy levels, and then assess the corresponding solutions.

Question Analysis

1. Question #2 (CLO-1):

•**Question**: Create a Java class representing a Circle with private radius attribute.

•**Expected Level**: Understanding and Application.

•**Identified Level**: Understanding (Translating problem into code).

•**Improvement Suggestions**: Enhance to include design considerations or optimizations, which could increase its level to Analysis or Synthesis.

•**Example Questions**:

1. "Design a Java class representing a Circle with considerations for scaling the radius dynamically based on user input."
2. "Analyze the impact of using various data types for radius in terms of precision and performance efficiency within a Circle class."

2. Question #3 (CLO-2):

•**Question**: Identify OOP concepts in the Student class and suggest inheritance.

•**Expected Level**: Analysis and Application.

•**Identified Level**: Analysis (Requires understanding of OOP concepts).

•**Level Matches**: No improvements needed.

Solution Analysis

1. Solution for Question #2:

•**Rating**: 8/10.

•**Key Elements**: Correct use of class and encapsulation, appropriate method implementation for calculating area.

•**Suggestions for Improvement**:

•Extend the solution to include error handling for negative radius values.

•Example improvement: "Implement validation checks in the setRadius method to ensure the radius is non-negative."

2. Solution for Question #3:

•**Rating**: 9/10.

•**Key Elements**: Clear explanation of encapsulation and correct demonstration of inheritance through examples.

•**No Improvements Needed**: Clear understanding of concepts demonstrated.

Summary

•The first question could benefit from deeper cognitive engagement, shifting from just implementation to analysis and design considerations.

•Both solutions demonstrate a solid grasp of OOP concepts, with consistent adherence to the expected learning outcomes aligned with the course standards.

This evaluation indicates that while the foundational understanding of concepts is present, there is room to elevate the complexity and critical thinking aspects in both questions and respective

answers. The modified questions also serve as effective learning tools to enhance student engagement with higher Bloom's Taxonomy levels.

If you need detailed examples or further elaboration on specific sections, please let me know!
