PYTHON CLASSES, SCOPE, STRING FORMAT, TRY ... EXCEPT

Objective Type Questions:

1. What is the primary purpose of classes and objects in Python?
   A) To organize code into reusable components
   B) To perform mathematical operations efficiently
   C) To control the flow of program execution
   D) To handle file input/output operations

2. Which keyword is used to implement inheritance in Python?
   A) extends
   B) inherit
   C) superclass
   D) class

3. Which of the following statements about variable scope in Python is true?
   A) Local variables are accessible only within the function where they are defined.
   B) Global variables can be accessed only within the module where they are defined.
   C) Nonlocal variables are accessible only within the class where they are defined.
   D) Global variables can be accessed from anywhere in the program.

4. What is the purpose of formatting strings in Python?
   A) To convert strings to uppercase
   B) To concatenate strings
   C) To replace placeholders with variable values
   D) To split strings into substrings

5. What is the main advantage of using try-except blocks in Python?
   A) They improve the performance of the code.
   B) They make the code more readable.
   C) They handle errors and exceptions gracefully.
   D) They allow Python to ignore syntax errors.

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Code Questions:

6. Write a Python class named `Rectangle` with attributes `length` and `width`, and a method `area()` that returns the area of the rectangle.

7. Define a class `Square` that inherits from the `Rectangle` class defined in question 6. Add a method `perimeter()` to calculate the perimeter of the square.

8. Write a Python function `calculateAge()` that takes the year of birth as input and returns the age. Handle any potential errors using a try-except block.

9. Write a Python program that prompts the user to enter their name and age, then prints a greeting message along with their age.

10. Define a function `divideNumbers()` that takes two numbers as input and returns the result of dividing the first number by the second. Handle the ZeroDivisionError using a try-except block.

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Sincerely,

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