Python Assignment

Section 1: Multiple-Choice Questions (MCQs)

1. Introduction to Python

1. What is the correct file extension for Python files?
   a) .py
   b) .python
   c) .pyt
   d) .pt

2. Which of the following is an interpreted language?
   a) C++
   b) Java
   c) Python
   d) Assembly

3. How do you run a Python script from the terminal?
   a) python script.py
   b) run script.py
   c) execute script.py
   d) py script.py

---

2. Basic Syntax & Data Types

4. What will be the output of the following code?

```
x = "10"
y = int(x) + 5
print(y)
```

a) "105"
b) 10
c) 15
d) Error

5. Which of the following is NOT a valid Python data type?
   a) str
   b) char
   c) float
   d) bool

What will be the output of the following code?

```
print(type(5.0))
```

6. a) <class 'int'>
    b) <class 'float'>
    c) <class 'double'>
    d) <class 'str'>

---

3. Operators

7. What will be the output of `10 // 3` in Python?
a) 3.33
b) 3
c) 4
d) Error

8. What does the `not` operator do?
    a) Negates a boolean value
    b) Performs bitwise NOT operation
    c) Adds two numbers
    d) None of the above

What will be the output of the following code?

```
x = 5
x += 3
print(x)
```

9. a) 5
    b) 3
    c) 8
    d) Error

---

4. Conditional Statements

10. What will be the output of the following code?

```
x = 10
if x > 5:
    print("Greater")
elif x == 10:
    print("Equal")
else:
    print("Smaller")
```

a) Greater
b) Equal
c) Smaller
d) Greater Equal

    11. What is the correct syntax for an `if` statement in Python?
        a) if (condition) {}
        b) if condition:
        c) if {condition}:
        d) if [condition]

---

5. Loops
12. How many times will the following loop run?

```
for i in range(1, 6):
    print(i)
```

a) 4
b) 5
c) 6
d) Infinite

    13. Which keyword is used to stop a loop prematurely?
        a) stop
        b) break
        c) exit
        d) terminate

Section 2: Coding Questions

1. Introduction to Python

- Write a Python program to print "Hello, Python!" to the console.
- Write a script that asks the user for their name and prints a greeting message.

2. Basic Syntax & Data Types

- Write a Python program to take two numbers as input from the user, convert them to integers, add them, and print the result.

3. Operators

- Write a Python program to check if a number is even or odd using the modulus operator (%).

4. Conditional Statements

- Write a program that takes a number as input and prints whether it is positive, negative, or zero.

5. Loops

- Write a Python program that prints the numbers from 1 to 10 using a for loop.
- Write a program that takes an integer input `n` and prints all even numbers from 1 to `n` using a while loop.

6. Functions

- Write a function that takes two numbers as arguments and returns their sum.
- Write a function that takes a string and returns its reversed version.

7. String Manipulation

- Write a Python program that takes a string as input and prints the number of vowels in the string.
- Write a program that replaces all occurrences of "Python" in a given sentence with "Java".

8. Lists, Tuples, Dictionaries, and Sets

- Create a list of 5 numbers. Print the sum of all numbers using a loop.
- Create a tuple with 3 elements and unpack them into separate variables.
- Create a dictionary with keys as names and values as ages. Print the age of a specific person.
- Write a Python program to find the union and intersection of two sets.

9. File Handling

- Write a Python program to create a text file, write "Hello, World!" into it, and then read the content from the file.

10. Error & Exception Handling

- Write a Python program that takes two numbers as input and divides the first by the second. Handle the `ZeroDivisionError` exception gracefully.