**Python - Strings, String Methods, Assignment Operators, Arithmetic Operators**

Section 1: Strings - Basic Concepts (10 Questions)

1. What is a string in Python?

A: A string in Python is a sequence of characters enclosed in quotes.

2. How do you declare a string literal in Python?

It is done by enclosing characters in single ' ', double " ", or triple quotes.

3. Which operator is used to concatenate two strings? +

4. How do you access the first character of a string `s`?

A: s[0]

5. What will be the output of `len('Hello')`? 5

6. Which method is used to convert all characters of a string to uppercase?

A: .toupper()

7. How do you check if a string `s` starts with the letter `'A'`?

A: It is done using s.startswith('A').

8. What does the `strip()` method do in Python?

A: It removes leading and trailing whitespaces from a string.

9. What is the difference between `isalpha()` and `isdigit()` string methods?

A: isalpha() checks for only letters; isdigit() checks for only digits.

10. How can you replace all occurrences of the letter `'a'` with `'@'` in a string `s`?

A: s.replace('a', '@')

Section 2: String Methods - Usage & Examples (10 Questions)

11. Write the syntax and usage of the `find()` method.

A: The Syntax is = string.find(substring) . The main function is it returns the lowest index of substring or -1 if not found.

12. What is the difference between the `find()` and `index()` methods?

A: find() returns -1 if not found, index() raises a ValueError.

13. What is the return type of the `split()` method?

A: It returns a list of strings

14. How do you join a list of strings into a single string?

A: Using separator.join(list) method.

15. Which method checks if all characters in a string are lowercase?

A: islower().

16. How do you convert a string to title case in Python?

Using .title()

17. What will be the output of `'Hello'.lower()`?

A: hello

18. How can you count the number of occurrences of a substring in a string?

A: Using .count(substring)

19. Write an example demonstrating the use of `startswith()` method.

A: “python”.startswith(“py”) it returns true .

20. What will be the output of `' Hello '.lstrip()`?

A: Hello

Section 3: Assignment Operators - Conceptual & Examples (5 Questions)

21. What is the difference between `=` and `==` operators in Python?

A: = is assignment; == is comparison for equality.

22. What is the meaning of `a += 5` in Python?

A: It means a = a + 5.

23. What happens when you write `a = b = 10` in Python?

A: Both a and b are assigned the value 10.

24. Explain the working of `a \*= 2` with an example.

A: If a = 3, then a \*= 2 results in a = 6.

25. Which operator is used for floor division assignment in Python?

A: //

Section 4: Arithmetic Operators - Concepts & Examples (10 Questions)

26. List all arithmetic operators used in Python.

A: +, -, \*, /, //, %, \*\*

27. What will be the output of `5 + 3 \* 2` in Python?

A: 11

28. What will be the result of `10 / 3` in Python?

A: 3.33333

29. What is the difference between `/` and `//` operators?

A: / returns division and // returns floor (integer) division.

30. What will be the result of `2 \*\* 3` in Python?

A: 8

31. What is the modulus operator used for?

A: To find remainder for e.g., 10 % 3 gives 1.

32. What will be the output of `-5 % 3` in Python?

A: 1

33. What is the precedence order of arithmetic operators in Python? 34. What will be the result of `4 + 3 - 2 \* 2 / 1`?

A: \*\*, then \* / // %, then + -

35. Which arithmetic operator is used to calculate powers in Python?

A: \*\*

Section 5: Mixed Code-based Questions (5 Questions)

36. Write a Python expression that concatenates `'Hello'` and `'World'` with a space in between.

A: 'Hello' + “ “ + 'World'

37. Given `s = "Hello"`, write Python code to print the last character of `s`.

A: print(s[-1])

38. If `a = 5`, write an expression to multiply `a` by `2` using the assignment operator.

A: a\*=2

39. Given `s = "Python"`, write Python code to print the substring `'yth'`.

A: print(s[1-4])

40. Write a Python expression to check if the word `'apple'` is present in the string `'I have an apple'`.

A: Using find(“apple”)