**Python assignment - 1**

1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.

\* => expression

'hello' => value

-87.8 => value

- => expression

/ =>expression

+ => expression

6 => value

2. What is the difference between string and variable?

=> 1.Defination:-

\* String: String is data type that represents textual data.

\* Variable: variable is a named reference to a values or object stored in memory.

2.Content:-

\* String: A String contains a sequence of characters, such as letters, numbers, symbols or spaces.

\* Variable: A variable can hold different types of values, including string, numbers,

Boolean, lists, dictionaries etc.

3.Mutability:-

* String: In python, strings are immutable, which means that once a string is created, its value cannot be changed.
* Variable: variables can be mutable or immutable depending on the data type

They are assigned.

4.Assignment:-

\* String: We can assign a string to a variable by simply providing the string literal.

\* Variable: A variable can store different values, including strings.

3. Describe three different data types.

=> 1.Integer(int):-

* The integer data type represents whole numbers without decimal points. It can be positive, negative or zero.
* Example: x = 10

2.String(str):-

* The string data type represents sequence of characters enclosed in quotes.
* Example: name = “sham” or ‘sham’.

3.List:-

* The list data type is used to store an ordered collection of items, which can be of different types.
* Example: fruits = [‘apple’, ‘banana’, ‘orange’]

4. What is an expression made up of? What do all expressions do?

=> In python, an expression is a combination of values, variables, operators, and functions

Calls that evaluates to a single value.

Expressions in python are used to compute or generate new values based on existing

Values and perform operations. They are commonly used in assignments, conditional

Statements, loop, function calls and more.

5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?

=> Differences between expressions and statements.

Expression:-

* An expression is a combination of values, variable, operators and function calls that evaluates to a single value.
* Expression can be as simple as a single value or as complex as a combination of multiple sub-expressions.
* Evaluating an expression produces a value as a result.

Statement:-

* A statement is a complete instruction that performs an action or task.
* Statement are used to control the flow of execution. Define behaviour or modify the program state.
* Statements does not produce a value.

6. After running the following code, what does the variable bacon contain?

bacon = 22

bacon + 1

=>After running code ‘bacon = 23’.

7. What should the values of the following two terms be?

'spam' + 'spamspam'

* ‘spamspamspam’

'spam' \* 3

* ‘spamspamspam’

8. Why is eggs a valid variable name while 100 is invalid?

=> ‘eggs’ is a valid variable name because it starts with a letter, contains only allowed

Characters, and is not a reserved word. On the other hand , ‘100’ is invalid as it starts

With a number, violating the rule that names should start with a letter or underscore.

9. What three functions can be used to get the integer, floating-point number, or string version of a value?

=> The three functions are.

1. Int().
2. Float().
3. Str().

10. Why does this expression cause an error? How can you fix it?

'I have eaten ' + 99 + ' burritos.'

* The expression **'I have eaten ' + 99 + ' burritos.'** causes an error because it attempts to concatenate a string (**'I have eaten '**) with an integer (**99**) directly, without converting the integer to a string. In Python, the **+** operator for string concatenation requires both operands to be strings.

To fix the error, you need to convert the integer **99** to a string before concatenating it with the other strings. You can do this by using the **str()** function to convert the integer to its string representation.