**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.**

Ans: \* = Expression (Multiplication Operator)

'hello' = String Value

-87.8 = Floating point value

- = Expression (Subtraction Operator)

/ = Expression (Division Operator)

* = Expression (Addition Operator)

6 = Integer value

**2. What is the difference between string and variable?**

Ans: A string is a data type used to represent a sequence of characters. It is typically used to store and manipulate textual data. In programming, strings are often enclosed in quotation marks (either single quotes or double quotes) to differentiate them from other types of data.

Example of a string: "Hello, World!"

A variable, on the other hand, is a named container that holds a value. It is used to store and manipulate data within a program. Variables have names that can be used to reference and access the data they hold. The value stored in a variable can be of different types, including strings, numbers, booleans, and more.

Example of a variable: message = “Hello, World!”

**3. Describe three different data types.**

Ans: 1. Integer: Integer data type represents whole numbers without any decimal point. They can be positive, negative and zero.

2. Float: Float data type represents real numbers with decimals. They can be positive or negative real numbers with decimals.

3. String: String data type represents textual data such as words, sentences and even a character too. They are either enclosed in ‘ ‘ or “ “.

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

Ans: An expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a result. It can be as simple as a single value or as complex as a combination of multiple values and operators.

The main purpose of all expressions is to produce some result and perform a specific computation so as to get the required output from it.

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

Ans: An expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a value.

On the other hand, a statement is a complete instruction or command that performs an action.

The assignment statement, spam = 10 is an example of statement where the value 10 is assigned to a variable spam.

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

**bacon = 22**

**bacon + 1**

Ans: Since the value of bacon is bacon + 1; the output of the above will be 23.

Hence bacon contains the value 23. 'I have eaten ' + str(99) + ' burritos.'

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

'spam' + 'spamspam'

'spam' \* 3

Ans: The values/outputs of the above two expressions will be same as spamspamspam.

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

Ans: In Python, variable names can contain letters (a to z, both lowercase and uppercase), digits (0 to 9), and underscores (\_). Also, variable names must start with a letter or an underscore. They cannot start with a digit. Hence, eggs is a valid variable and 100 is invalid variable.

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

Ans: To get the integer, floating-point number, or string version of a value ‘int ()’, ‘float ()’ and ‘str ()’ functions can be used.

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

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

Ans: In Python, the + operator is used for concatenating strings, but it cannot directly concatenate a string with an integer. Hence the given expression 'I have eaten ' + 99 + ' burritos.' will show an error. To fix it we need to convert the integer to a string before concatenating it with other strings. Like, 'I have eaten ' + str(99) + ' burritos.'