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.**

\* This is mathematical operators

'hello' -String

-87.8 - Floating Point

- This is mathematical operators

/ This is mathematical operators

* This is mathematical operators

6 -Integer

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

A Variable is a store of information, and a String is a type of information you would store in a Variable.

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

i.Numeric Data type:

In Python, numeric data types represent the data which has numeric value. Numeric values can be integers, floating numbers or even complex numbers. These values are defined as int, float and complex classes in Python.

II.Sequence type:

In Python, sequence is the ordered collection of similar or different data types. Sequences allows to store multiple values in an organized and efficient fashion. There are several sequence types in Python –

String,List,Tuple.

III.Dictionary data type:

Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only a single value as an element, Dictionary holds key:value pair. Key-value is provided in the dictionary to make it more optimized. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a ‘comma’.

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

An expression is a combination of operators, constants and variables.

Value is represented by expressions. They differ from statements in that statements do something, whereas expressions are a representation of value. Any string, for example, is also an expression because it represents the value of the string.

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

The Main Differences Between an Expression and a Statement in Programming. **Expressions can be assigned or used as operands, while statements can only be declared**. Statements create side effects to be useful, while expressions are values or execute to values.

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

bacon = 22

bacon + 1

Ans:The expression "bacon + 1" evaluates to 23, but since the result of the expression is not assigned to any variable, the value of "bacon" remains unchanged. If you wanted to update the value of "bacon" to be the result of the expression, you would need to assign the result back to the variable using the "=" operator like this:

bacon=bacon+1

or the shorthand version:

bacon+=1

This would update the value of “bacon” to 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?**

In programming language like python,variable names must follow certain rules and conventions.specially,a variable name in python must start with a letter and can be followed by any combination of letters, digits, and underscores. Therefore, "eggs" is a valid variable name because it starts with a letter, while "100" is not a valid variable name because it starts with a digit.

It is important to note that variable names should also be descriptive and meaningful to the context of the program in which they are being used. While "eggs" might be a valid variable name, it might not be the most meaningful name for a variable representing the number of eggs in a basket, for example.

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

The **int() , float() , and str( )** functions will evaluate the integer, floating-point number, and string versions of the value passed to them.

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

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

Ans:The expression causes an error because you are trying to concatenate a string 'I have eaten ' with a number 99 using the '+' operator.

To fix it, you need to convert the number 99 to a string before concatenating it with the other string. You can do this using the str() function in Python:

'I have eaten ' + str(99) + ' burritos.'

This will convert the number 99 to a string and concatenate it with the other strings, resulting in the output: 'I have eaten 99 burritos.'