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.

\*

'hello' is value(string)

-87.8 is value(float)

- expression is mathematical operators(subtraction)

/ expression is mathematical operators(division)

* expression is mathematical operators(addition)

6 is value(integer)

2. What is the difference between string and variable?

A string is a data type used in programming, that is used to represent text rather than numbers

a variable is a value that can change, depending on conditions or on information passed to the program.

3. Describe three different data types.

A list is a number of items in an ordered or unordered structure

A dictionary is defined as a general-purpose data structure for storing a group of objects. A dictionary is associated with a set of keys and each key has a single associated value.

A tuple is a data structure that is an immutable, or unchangeable, ordered sequence of elements

Integer is a data type used to represent real numbers that do not have fractional values

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

In computer programming, an expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a result. An expression can be as simple as a single constant value or variable, or it can be a complex combination of values and operators.

Expressions can be used to perform calculations, compare values, and make decisions in a program. They are a fundamental part of most programming languages and are used extensively in writing code.

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

a statement is a complete unit of code that performs some action. While an expression produces a value, a statement does not necessarily do so. An assignment statement, like spam = 10, is an example of a statement that assigns a value (in this case, 10) to a variable (in this case, spam).

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

bacon = 22

bacon + 1

becon = 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?

Based on these rules, the variable name eggs is valid because it consists of only letters and is not a Python keyword. On the other hand, the value 100 is not a valid variable name because it begins with a digit. Variable names cannot begin with a digit in Python.

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

1. int(): This function can be used to get the integer version of a value.
2. float(): This function can be used to get the floating-point number version of a value.
3. str(): This function can be used to get the string version of a value.

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 a TypeError in Python.

The reason for this error is that we are trying to concatenate a string ('I have eaten ') with an integer (99), which is not allowed in Python. The + operator can only be used to concatenate strings with other strings, or to add numbers together.

To fix this error, we need to convert the integer 99 to a string before concatenating it with the other strings. We can do this using the str() function, like this:

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

This will convert the integer 99 to a string ('99') and then concatenate it with the other strings to produce the final result:

'I have eaten 99 burritos.'