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 (string)

-87.8= value

- = expression

/ =expression

* = expression

6 = value

2. What is the difference between string and variable?

Ans:

A string is a sequence of characters, typically used to represent text. It is enclosed within either single quotes ('') or double quotes ("").

A variable is a symbolic name that represents or refers to a value. Variables are used to store and manipulate data in computer programs. Unlike strings, variables can hold different types of data, such as numbers, strings, or other types of values.

3. Describe three different data types.

Ans: The three data type(s) are

Integer: Represents whole numbers, positive or negative, without any decimal point.

Float (Floating-point number): Represents real numbers, including both integer and fractional parts, and is distinguished by the presence of a decimal point.

String: Represents a sequence of characters, enclosed within either single quotes ('') or double quotes ("").

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

Ans: . An expression is made up of operators and operands. Operators perform operations on operands. All expressions evaluate to a value.

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

Ans: . An expression evaluates to a value, whereas a statement is a complete line of code that performs some action. An expression can be part of a statement, such as an assignment statement where a variable is assigned the value of an expression.

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

bacon = 22

bacon + 1

Ans: bacon will firstly contain 22 and then add to 1 gives 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?

Ans: 'eggs' is a valid variable name because it follows the rules for variable names in most programming languages, which typically allow letters, digits, and underscores in variable names, but they cannot start with a digit. '100' is invalid as a variable name because it starts with a digit.

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

Ans: int(): Used to convert a value to an integer.

float(): Used to convert a value to a floating-point number.

str(): Used to convert a value to a string.

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 it attempts to concatenate a string ('I have eaten ') with an integer (99) and another string (' burritos.'). To fix it, you can convert the integer to a string before concatenation:

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