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' => String

-87.8 => Integer

- => Expression

/ => Expression

* => Expression

6 => Integer

2. What is the difference between string and variable?

String: A string is a sequence of characters enclosed in quotation marks (either single or double)

Variable: A variable is a symbolic name that represents a value or a memory location in a program. It can hold different types of values, including strings, numbers, and other data types

3. Describe three different data types.

Integer: It represents whole numbers without any decimal points, such as 5, -10, or 0.

Float: It represents numbers with decimal points, such as 3.14, -2.5, or 0.0.

String: It represents a sequence of characters, such as "Hello, World!", "OpenAI", or "123".

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

An expression is made up of operators, variables, and values that are combined to produce a result.

Expressions can perform mathematical calculations, manipulate strings, or evaluate logical conditions.

All expressions evaluate to a value.

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

An expression produces a value, whereas a statement performs an action.

In the assignment statement "spam = 10," it is a statement that assigns the value 10 to the variable spam.

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

bacon = 22

bacon + 1 => result = 23

Ans = 22

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

'spam' + 'spamspam'

'spam' \* 3

'spam' + 'spamspam' would result in the string 'spamspamspam'. The + operator concatenates the two strings together.

'spam' \* 3 would result in the string 'spamspamspam'. The \* operator repeats the string 'spam' three times.

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

Since "eggs" does not start with a number and doesn't contain any spaces, it is a valid variable name.

However, "100" starts with a number, which violates the naming rule, making it an invalid variable name.

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

Three functions that can be used to convert values to different types are:

int(): It converts a value to an integer data type.

float(): It converts a value to a floating-point (decimal) data type.

str(): It converts a value to a string data type.

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 you cannot concatenate a string with an integer directly. To fix it, you can convert the integer to a string using the str() function, like this: 'I have eaten ' + str(99) + ' burritos.'