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'

-87.8

-

/

+

6

Values are: ‘hello’, -87.8, 6

Expression: \*, -, /, +

2. What is the difference between string and variable?

A string is a data type that represents a sequence of characters, such as letters, numbers, and symbols.

A variable, on the other hand, is a named storage location that holds a value. It acts as a container for storing and retrieving data during the execution of a program. Variables can store different types of data, including strings, numbers, Boolean values, and more

3. Describe three different data types.

1. Integer

2. Float

3. String

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

An expression is a combination of values, variables, operators, and function calls that evaluates to a single value. It can be as simple as a single value or as complex as a combination of multiple sub-expressions. They are used to perform calculations, manipulate data, and make decisions.

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

In the case of the assignment statement spam = 10, the expression 10 evaluates to the value 10, and that value is assigned to the variable spam. The assignment statement itself is a statement that changes the state of the program by assigning a value to a variable.

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

bacon = 22

bacon + 1

variable contains 22

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

'spam' + 'spamspam'

'spam' \* 3

'spamspamspam'

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

Variable name cannot start with number i.e. 100 so it is invalid

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

num = int("10") # Converts the string "10" to the integer 10.

num = float("3.14") # Converts the string "3.14" to the float 3.14.

text = str(42) # Converts the integer 42 to the string "42"

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 it attempts to concatenate a string ('I have eaten ') with an integer (99) using the + operator. In Python, the + operator is used for addition when used with numeric types, and for concatenation when used with strings.

We can fix this by by using the str() function to convert the integer 99 to a string, we can concatenate it properly with the other string literals. The str(99) converts the integer 99 to the string '99', allowing the concatenation to happen without any errors.

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