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' -> Values

-87.8 -> Values

- -> Expression

/ -> Expression

+ -> Expression

6 -> Values

2. What is the difference between string and variable?

-> A ***string*** is a series of characters. Anything inside quotes is considered as string. We can use single or double quotes. Each of a string’s characters corresponds to an index number, starting with index number 0.

A ***variable*** is a reserved memory location to store values. Variable names can contain only letters numbers and underscore. It can start with underscore or letter but not numbers.

3. Describe three different data types.

-> **Data types**

* **Integer:** This value is represented by int class. It contains positive or negative whole numbers (without fractions or decimals). In Python, there is no limit to how long an integer value can be.
* **Float:** This value is represented by the float class. It is a real number with a floating-point representation. It is specified by a decimal point.
* List: Lists are just like arrays, declared in other languages which is an ordered collection of data. It is very flexible as the items in a list do not need to be of the same type.

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

-> An ***expression*** refers to a combination of values, variables and operators that are compiled together.

***Expressions*** provide a visible representation of a set of data concerning our code. It makes it easier to keep track of everything involved in our code, so that we can more easily troubleshoot problems.

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

-> An ***expression*** refers to a combination of values, variables and operators that are compiled together.

A ***statement*** refers to a command that is used in a code to perform several tasks.

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

bacon = 22

bacon + 1

-> Variable bacon contains 22 as the expression does not changes the initial value of bacon.

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

'spam' + 'spamspam'

'spam' \* 3

-> Value of both the terms will be ‘spamspamspam’

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

-> 100 is invalid as a variable name as variable names cannot start with numbers. It can only start with underscore and letters.

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

-> Function to get floating point number of a value is ***float()***

Function to get string version of a value is ***str()***

Function to get integer number of a value is ***int()***

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

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

-> It throws error as **string** can only be concatenated with **strings**. And as 99 is an **integer** it cannot be concatenated with the other strings.

To fix this error we need to do the following:

**‘I have eaten** **‘ +** **str(99) +** **‘ burritos.’**

**str()** function is used to represent 99 as a string.