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

**Ans:** \* , -, / are the expressions and ‘hello’ , -87.8 are values.

2. What is the difference between string and variable?

**Ans:** **String** is a data type for a sequence of characters (e.g. ‘’zaldnQfYJSMfwp”). In addition to letters, they can also include numbers, spaces, punctuation, and even line breaks (using ‘\n’ for new line). Strings cannot be used for calculation (even if your string is just a number like ‘5’), we have to convert it to a number data type first to perform math operations on it. defining a string by putting single quotes (‘ ’) or double quotes (“ “) around whatever you want to classify as a string. The string data type is primarily used for reading and writing data.

**Variable** is a reserved memory location to store values. In other words, a variable in a python program gives data to the computer for processing. Every value in Python has a datatype. Different data types in Python are Numbers, List, Tuple, Strings, Dictionary, etc.

3. Describe three different data types.

Python has the following data types built-in by default, in these categories:

|  |  |
| --- | --- |
| Text Type: | str |
| Numeric Types: | int, float, complex |
| Sequence Types: | list, tuple, range |
| Mapping Type: | dict |
| Set Types: | set, frozenset |
| Boolean Type: | bool |
| Binary Types: | bytes, bytearray, memoryview |

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

**Ans:** Expression is made up of values, containers, and mathematical operators (operands) e.g. a = 2 + 3 and expressions are used to evaluate the values or represent the result on the screen.

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

**Ans:** Expression is made up of values, containers, and mathematical operators (operands) and the statement is just like a command that a python interpreter executes like print.

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

bacon = 22

bacon + 1

**Ans:** The Variable contains 23.

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

'spam' + 'spamspam'

'spam' \* 3

**Ans:** The value of above two terms is **spamspamspam.**

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

**Ans:** Because we can't start giving variable as an integer name. If we want, we should begin with, a string-like alphabet name then integer. e100 or eggs100 is valid

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

**Ans:** The **int(), float(), and str( )** functions will evaluate to the integer, floating-point number, and string versions of the value passed to them.

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

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

**Ans:** The above expression causes error because we cannot concatenate two different datatypes. The above expression contains string and integer i.e 99. We have to convert 99 to string by keeping it in quotes. The correct expression to avoid error is

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