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.

**\* is an expression**

**'hello' is a value**

**-87.8 is a value**

**- is an expression**

**/ is an expression**

* **is an expression**

**6 is a value**

2. What is the difference between string and variable?

**String is a data type for a 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’), you would have to convert it to a number data type first to perform math operations on it.**

**Variables are used to store information in the form of values. We cannot use space in-between two words. In addition, in string we can use Space.**

**Variables are references to values that have types.**

***String* is simply one of the handful of types that Python uses along with various number types, collection types (list, string, tuple, dict, and set), objects and a few more.**

**A variable is called so because the value it references can vary (in contrast to a constant like in some languages).**

3. Describe three different data types.

**Text type: str which can hold strings/text**

**Numerical type: int, float and complex which can hold integer, floating point and complex data types**

**Boolean type: bool which can hold either true/false or 0/1 values.**

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

Most statements (logical lines) that you write will contain expressions.

A simple example of an expression is 4+8.

An expression can be broken down into operators and operands.

Operators are functionality that do something and can be represented by symbols such as + or by special keywords.

Operators require some data to operate on and such data is called operands.

In this case, 4 and 8 are the operands.

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

**Statements are indicative of an action or command such as print statements, assignment statements.**

**Whereas, an Expression is a combination of variables, operations and values that yields a result value**.

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

bacon = 22

bacon + 1

**Ans: bacon=22 (as the result of bacon+1 is not assigned back to ‘bacon’)**

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

'spam' + 'spamspam'

'spam' \* 3

**Ans. Output of both are the same.**

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

**This is because variable names cannot begin with a number, it can be alphanumeric or use underscore in between but not start with numeral.**

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: In above statement, we need to enclose 99 in double/single quotes like “99” as follows.

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

This will give result as : 'I have eaten 99 burritos.'