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 (Arithmetic Operator – Multiplication)**

'hello' = **Value(String)**

-87.8 = **Value(Float)**

- = **Expression (Arithmetic Operator – Subtraction)**

/ = **Expression (Arithmetic Operator – Division)**

* = **Expression (Arithmetic Operator – Addition)**

6 = **Value(Int)**

2. What is the difference between string and variable?

**Ans. :**

**String : String is a data type. In Python strings are surrounded by single or double quotation marks. A variable can be of type string which will contain a string value.**

**Variable: Variable contains the different type of data. A variable can contain data like int, float, string etc. In python we don’t need to define the type of variable and can even change type after they have been set. A variable can be of type string.**

3. Describe three different data types.

**Ans:**

**String : String is a data type. In Python strings are surrounded by single or double quotation marks. For e.g: “Hello”, ‘Software’ etc.**

**Int: A int data type will contains the numeric type value. It will not contain any decimal values. It can contain –ve +ve and zero value in it. For e.g a=2,b=3.**

**Bool: A bool will contain Boolean value into it. So a bool data type can only contain True or False in it. For e.g a=True, b=False.**

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

**Ans:**

**Expressions are the values or a set of values. Expressions are made up of some values and operators to evaluate and give us some value. A expression can assign a value to a variable. A expression evaluates and gives us some values. A expression can be used in many places like in ‘if’ to check some condition.**

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

**Ans:**

**Expressions are representations of value. They are different from statement in the fact that statement do something while expression are representation of value. Expression can evaluate and give us value but statement is just a particular task like assignment statement.**

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

bacon = 22

bacon + 1

**Ans: 22 (because in 2nd line we are only adding 1 in value of bacon not assigning that value to bacon so value of bacon will be 22 only)**

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

'spam' + 'spamspam' = **‘spamspamspam’**

'spam' \* 3 = **‘spamspamspam’**

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

**Ans:**

**Variable name may only contain letters, digit(0-9) or underscore. Also variable name can’t start with digit. Digit can only be used after a letter.**

**Eggs is not a keyword nor does it is a value in python. If instead of eggs if we try to use “eggs” as variable it will give error because now it will become literal in python and we can’t define a literal as variable. So eggs is valid while 100 is not.**

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

**Ans:**

**To get integer value we use int() function.**

**To get floating-point number we use float() function.**

**To get string we use str() function.**

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

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

**Ans:**

**It cause error because string can be concatenate with string only and here 99 is a int value.**

**To fix it we can put 99 in quotation mark.**

**‘I have eaten’ + ‘99’ + ‘burritos’.**

**The above expression will work fine.**