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' value

-87.8 value

- expression

/ expression

+ expression

6 value

2. What is the difference between string and variable?

**Answer** - A Variable can store the information, and a String is a type of information you would store in a Variable.

A String is usually words/sentences, enclosed with quotes (" "/‘ ‘)

eg: a ="Hello" (Here, a is the Variable, and we declared it as a String,)

3. Describe three different data types.

**Answer**:

1. **Numbers**: In Python, numeric data type represent the data which has numeric value. Numeric value can be integer, floating number or even complex numbers. These values are defined as int, float and complex class in Python.
2. **String**: Python does not have a character data type, a single character is simply a string with a length of 1. Strings in Python can be created using single quotes or double quotes or even triple quotes.
3. **List**: List is a collection of things, enclosed in [ ] and separated by commas. Lists are the simplest containers that are an integral part of the Python language. Lists need not be homogeneous always which makes it the most powerful tool in Python. A single list may contain Lists are **mutable**, and hence, they can be altered even after their creation
4. **Tuple**: Just like list, tuple is also an ordered collection of Python objects. The only difference between tuple and list is that tuples are **immutable** i.e. tuples cannot be modified after it is created. It is represented by tuple class and enclosed in ( ).
5. **Dictionary**: Dictionary in Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element, Dictionary holds key:value pair. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a comma , .

In Python, a Dictionary can be created by placing a sequence of elements within curly {} braces, separated by ‘comma’. Values in a dictionary can be of any datatype and can be duplicated, whereas keys can’t be repeated and must be immutable. Dictionary can also be created by the built-in function dict(). An empty dictionary can be created by just placing it to curly braces{}.

Note – Dictionary keys are case sensitive, same name but different cases of Key will be treated distinctly.

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

**Answer:** An expression is a combination of values, variables, operators and calls to functions. Expressions need to be reduced to a value or return anything. If you ask Python to print an expression, the interpreter evaluates the expression and displays the result.

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

**Answer:** An expression is something that can be reduced to a value or return anything, for example "1+3" is an expression, but "spam = 10" is not, as it cannot be reduced to a value.

If it doesn't return anything, it's a statement,

if it does, it's an expression.

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

bacon = 22

bacon + 1

**Answer:** 23

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

'spam' + 'spamspam'

'spam' \* 3

**Answer :** 'spamspamspam'

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

**Answer:** Because Variable names cannot begin with a number.

9. What three functions can be used to get the integer, floating-point number, or string

version of a value?

**Answer :** int() , float() and str( )

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

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

**Answer :** The expression causes an error because 99 is an integer, and only strings can be concatenated to other strings with the + operator.

The correct way is **'I have eaten ' + str(99) + ' burritos.** **'**