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

**Answer:**

Values : ‘hello’ , -87.8, 6

Expressions: \* - / +

2. What is the difference between string and variable?

**Answer:**

Variable is the name given by us to a location in memory. It stores values, which can be of different datatype e.g. Integer, String etc

String is thus a datatype which is used to store value inside a variable

3. Describe three different data types.

**Answer:**

**Numeric**: 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.

**Sequence**: Sequence is the ordered collection of similar or different data types. Sequences allows to store multiple values in an organized way. Some sequence types are: String, List, Tuple

**Set**: Set is an unordered collection of data type that is iterable, mutable and has no duplicate elements. The order of elements in a set is undefined though it may consist of various elements.

Creating Sets : Sets can be created by using the built-in set() function with an iterable object or a sequence by placing the sequence inside curly braces, separated by ‘comma’. Type of elements in a set need not be the same, various mixed-up data type values can also be passed to the set.

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 evaluated. The interpreter evaluates the expression and displays the result. The evaluation of an expression produces a value. A value or a variable all by itself is also considered an expression, because these always evaluates to itself.

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

**Answer:**

Any Instruction that a python interpreter can execute (carry out) is called a Statement. In other words – A Statement is the smallest executable unit of code that has an effect, like creating a variable or displaying a value. A statement does something. Statements represent an action or command.

Expression is a combination of variables, operations and values that yields a result value. ... If you ask Python to print an expression, the interpreter evaluates the expression and displays the result.

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:**

'spam' + 'spamspam' = spamspamspam

'spam' \* 3 = spamspamspam

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

**Answer:**

Because of following Rules for Python variables:

* A variable name must start with a letter or the underscore character
* A variable name cannot start with a number
* A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ )
* Variable names are case-sensitive (age, Age and AGE are three different variables)

In above example, 100 is starting with a number that’s why it is invalid

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

**Answer:**

int() for integer, float() for floating-point number and str() for string

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

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

**Answer:**

Because we can only concatenate str (not "int") to str. To fix this we put quotes around 99 to convert it to str

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