Q. no 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.

(i) *   Ans: Mathematical expression

(ii) 'hello'   Ans: Value(String)

(iii)-87.8   Ans: Value(Integer)

(iv) -   Ans: Mathematical expression

(v) /   Ans: Mathematical expression

(vi) 6   Ans: Value(Integer)

2.What is the difference between string and variable?

Ans: Variable is a reference or a storage location where data is stored. Viewing the said reference will display us the data it has stored in it.Variables are mutable in python.
Example:
x=3
y="iNeuron"

However, string is a data type in python which is a sequence of characters. Strings are immutable in python.Once created, they cannot be changed.
Example:
name="Data"
class="Data Science"
Strings are declared in python by using the sequence in quote marks(single or double).

3.Describe three different data types.

Ans: Following are some data types in Python:

(i)Integers: Represented by <int>, this data type contains integer values(all negative, positive including 0. Only contain integral values. E.g 7,-9,0

(ii)Float: Represented by <float>, this data type contains decimal values. Example: 9.9,6.44

(iii) Strings: Represented by <str>, this data type contains a sequence of characters. String is the default data type of python. Example: "Computer", "#2@@@@"

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

Ans: An expression in Python is usually made up of two quantities: (i) Operators and (ii) Operands and and python evaluates the said expression and gives certain output.

The said operators can be of different types like mathematical, logical, relationship, bitwise and operands can be of different types like integers, floats, complex etc.

Depending on the nature of operators and operands, there are various types of expressions in Python e.g Mathematical expressions, logical expressions, Integral expressions etc

Python expressions combine the operands by the different operator and give us a certain output value.

E.g
x=23
y=x+1

The said code stores the value of x(23)+1=24(result) in variable y.

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

Ans: Expressions are combinations of operators and operators designed to give us certain outputs after evaluation.

However, assignment statements assign any said value to the variable

Example:
y=3
Assigns the value of 3 to variable y
name="Mursaleen"
Assigns the string "Mursaleen" to variable name

6. After running the following code, what does the variable bacon contain?
bacon = 22
bacon + 1

Ans: bacon=22 ##Assigns the value of 22 to variable bacon
     bacon+1## adds 1 to the variable bacon

However, the original value of 22 is retained in the bacon as no assignment is done

7. What should the values of the following two terms be?
'spam' + 'spamspam'
'spam' * 3

Ans: **'spam' + 'spamspam'** will concatenate spam with spamspam
Output will be: spamspamspam

'spam' * 3
Spam string will be concatenated thrice
output: spamspamspam

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

Ans: eggs is a valid variable name because it follows the rules for the variable name declaration in Python.
100 cannot be used as variable because python does not allow the first character of a variable to be digit

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

Ans: The three functions are said as follows:

i) int(): Returns integer value
ii) str(): Returns string value
iii) float(): returns float value

However, only certain data conversions are permissible in Python.

10. Why does this expression cause an error? How can you fix it?
'I have eaten ' + 99 + ' burritos.'

The said line of code will return a TypeError in python as we are trying to concatenate an integer(99) with the strings. The said code can be corrected by making 99 too as a string by putting it in quote marks.

The correct code will be:
'I have eaten ' + "99" + ' burritos.'

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