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:**

**String:**

* Strings are ordered sequence of characters.
* It supports indexing and slicing.
* Anything in ‘’ or “” is a string for python.
* Strings are immutable.
* Eg: ”hello”,’science’,”150”

**Variable**

Variable is symbolic name which has a associated value and this associated value can be changed.

Eg: b=10

b🡪 variable

= 🡪 Assignment Operator

10=> Associated Value

3. Describe three different data types.

**Answer:**

**Datatypes in python**

* Number

1. Integer

b) Float

* String
* List
* Dictionary
* Tuple
* Sets
* Boolean

**Number:**

1. **Integer**

Whole numbers

Eg:100,200,5

1. **Float**

Number with decimal point

Eg: 100.00,47.23,2.14

**String**

* Strings are ordered sequence of characters.
* It supports indexing and slicing.
* Anything in ‘’ or “” is a string for python.
* Strings are immutable.
* Eg: ”hello”,’science’,”150”

**List**

* [ ] or list()
* Lists are ordered sequence of objects.
* It supports indexing and slicing.
* Lists are mutable.
* It can contain all datatypes.
* Eg: [1,2.5,’hello’, [1,2,3], {‘k1’:10}, (1,2,3), {1,2,3}, True]

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

**Answer**

* A combination of operands and operators is called an expression.
* The expression in python produces some value or result after being interpreted by the python interpreter.
* Eg: result= a+b+c

Result🡪 variable to store the expression value

a,b,c🡪 operands

+ 🡪operator

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

**Answer:**

* A statement in python is evaluated for some results.
* An expression in python is not evaluated for some results.
* The execution of a statement changes the state of the variable.
* The expression evaluation does not result in any state change.

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

bacon = 22

bacon + 1

**Answer:**

22

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:**

* Variable name will not start with a number.
* They must start with a letter or the underscore character, but not with a digit.

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

**Answer**

Int(), float(), str()

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

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

**Answer**

* Python can only concatenate str (not int) to str.
* The correct expression is **'I have eaten ' + str (99) + ' burritos.'**