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

**Ans - values are** ‘hello’, -87.8, 6

**Expressions are** \*, -, /, +

2. What is the difference between string and variable?

**Ans** – **variable** is a kind of identifier which is used to locate an memory address by which we can access or modify that value when we want.

E.g. a = 10

Here a is a identifier which is accessing memory location where 10 is stored.

**String** – it is a datatype type which is created using quotes(using single or double)

E.g. – a=”data science ”

Here a is variable and data science is value of type string.

3. Describe three different data types.

Ans – three data types are

1. Numeric – this represent the data which contain some numeric values there are three types of numeric data type

a) integers – this contain only positive negative numbers there is no involvement of fractional numbers. It is represented using int.

b) float – it contain all the real numbers with fractional and decimal numbers.

It is represented using float.

c) complex numbers – complex numbers contains the imaginary + real numbers.

2)Boolean – it contains the only true false data .this is mostly used in looping to check

condition is true or not.

1. Sequence – In this type data is stored in ordered and unordered sequence. It is used to store multiple values in efficient manner.
2. String – this is created using quotes either double or single. Represented using str
3. List – it is created using square brackets. List is mutable i.e. we can change a particular value at any time.
4. Tuple – it is created using () brackets . it is immutable which means we can not change its values.

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

**Ans**- Expression is made up of operands, operators, variables and constant.

All expression produce a value using operands and operators.

Example – result = num1+num2\*num3

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

**Ans** – An expression is something which is going to produce some values

Example – result = a+b-c\*d

Statement are just instruction which is not producing any kind of values.

Example – for I in range(1,9):

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

bacon = 22

bacon + 1

**Ans** – variable **bacon contain 22** because we have assigned only one time in the second operation we have only added 1 in bacon and we haven’t assigned it to bacon.

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

'spam' + 'spamspam'

'spam' \* 3

**Ans**- In both the cases value will be **spamspamspam.** In first expression we are concatenating string and in second one we are multiplying string

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

**Ans-** In python variable name should start with string not with integer.

That’s why eggs is valid variable name and 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 the integer version of value we can use **int()** function

For floating point value we can use **float()** function

And for string we can use **str()** function

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

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

**Ans** – In this expression string is concatenating with integer which is not allowed in python.

To fix that error we have to convert integer type to string .

i.e. ‘I have eaten’ + ’ 99 ’ +’ burritos’.