**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 –**'hello' , -87.8 , 6** these are the values and **\* - / +** these are expressions.

**2. What is the difference between string and variable?**

**Ans** - A variable is a name that refers to a value. An **assignment statement** creates a new variable and gives it a value for e.g n = 17.

A string is a sequence of characters. strings in Python are arrays of bytes representing unicode characters.

**3. Describe three different data types.**

**1.String(str) :** A string is a sequence of characters.Strings in python are surrounded by either single quotation marks, or double quotation marks for e.g fruit = 'banana'. A string is a **sequence**, which means it is an ordered collection of other values.

## 2. List :

Lists are used to store multiple items in a single variable.

Like a string, a list is a sequence of values. In a string, the values are characters; in a list,

they can be any type. The values in a list are called elements or sometimes items.

There are several ways to create a new list; the simplest is to enclose the elements in square

brackets [ ]:

[10, 20, 30, 40]

['crunchy frog', 'ram bladder', 'lark vomit']

The first example is a list of four integers. The second is a list of three strings. The elements

of a list don’t have to be the same type. The following list contains a string, a float, an

integer, and another list:

['spam', 2.0, 5, [10, 20]]

A list within another list is nested.

**3.Tuple :**

A tuple is a sequence of values. The values can be any type, and they are indexed by

integers, so in that respect tuples are a lot like lists. The important difference is that tuples

are immutable.

Syntactically, a tuple is a comma-separated list of values:

t = 'a', 'b', 'c', 'd', 'e'

Although it is not necessary, it is common to enclose tuples in parentheses:

t = ('a', 'b', 'c', 'd', 'e')

To create a tuple with a single element, you have to include a final comma:

t1 = 'a',

A value in parentheses is not a tuple:

t2 = ('a')

type(t2)

<class 'str'>

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

An **expression** is a combination of values, variables, and operators. A value all by itself is

considered an expression, and so is a variable, so the following are all legal expressions:

>>> 42

42

>>> n

17

>>> n + 25

42

When you type an expression at the prompt, the interpreter evaluatesit, which means that

it finds the value of the expression. In this example, n has the value 17 and n + 25 has the

value 42.

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

An **expression** is a combination of values, variables, and operators .

a **statement** is a unit of code that has an effect, like creating a variable or displaying a value.

**Expression**

* Expressions always returns a value.
* Functions are also expressions. Even a non returning function will still return None value, so it is an expression.
* Can print the result value.
* Examples Of Python Expressions: “Hello” + “World”, 4 + 5 etc.

**Statement**

* A statement never returns a value.
* Cannot print any result.
* Examples Of Python Statements: Assignment statements, conditional branching, loops, classes, import, def, try, except, pass, del etc.

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

**bacon = 22**

**bacon + 1**

Ans –bacon contains the value 22.

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

**'spam' + 'spamspam'**

**'spam' \* 3**

Ans - 'spam' + 'spamspam'

'spamspamspam'

'spam' \* 3

'spamspamspam'

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

A variable name must start with a letter or the underscore character and it cannot start with a number. Hence eggs is valid variable name and 100 is invalid

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

Ans- The **int() , float() , and str( )** functions will evaluate to the integer, floating-point number, and string versions of the value passed to them.

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

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

**Ans -**99 is the integer so we can’t concatenate string with integer. To concatenate we must have to convert 99 to string. so after applying quotes to 99 we can concatenate the whole term.