**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.**

|  |  |
| --- | --- |
| \* | Expression |
| ‘hello’ | Value |
| 87.8 | Value |
| - | Expression |
| / | Expression |
| + | Expression |
| 6 | Value |

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

|  |  |
| --- | --- |
| **Variable** | **String** |
| A Variable is a storage where we can store a data or information in a program. | String is a data or information which we can store in a variable. |

Example:

x = “Welcome to Python”

In above example, x is a variable (storage place) where we have stored the data “Welcome to Python” which is a string.

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

**int, float, complex**

The **int()** function converts the specified value into an integer number.

Syntax: int(*value*, *base*)

Example:

x = int("12")

print x

o/p: 12

The **float()**function converts the specified value into a floating point number.

Syntax: float(value)

Example1:

x = float("3.500")

print x

o/p: 3.5

Example2:

x = float(3)

print x

o/p : 3.0

The **complex()** function returns a complex number by specifying a real number and an imaginary number.

Syntax: complex(real, imaginary)

Example:

x = complex('3+5j')

print x

o/p: 3+5j

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

An Expression is a combination of values, operators and literals which produces some value or result after being interpreted by the Python interpreter.

It is a combination of operands and operators.

Example:

a = 30

a = 30 + 10

print a

o/p: 40

In this expression, the first 30 is the value assigned to the variable a. After addition is performed, the result (40) is assigned to the variable a.

**5. This assignment statements, like spam = 10. What is the difference between an**

**expression and a statement?**

An **expression** is a combination of values and functions that are combined and interpreted by the compiler to create a new value. An Expression always evaluates to a value.

A **statement** which is just a standalone unit of execution and doesn’t return anything. A statement does something, like creating a variable or displaying a value.

Example:

a = 30 # statement

a = 30 + 10 # expression

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

**bacon = 22**

**bacon + 1**

The value bacon will be 22+1 in step 2. So the variable bacon contains 23

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

**‘spam’ + ‘spamspam’**

**‘spam’ \* 3**

‘Spamspamspam’ . It will always displays the value of last statement

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

eggs is a valid variable name because it satisfies the condition that a variable name must starts with an alphabet.

100 is not a valid variable name because it starts with a number.

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

**version of a value?**

 int() , float() , and str( )

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

‘I have eaten’ + 99 + ‘burritos’ – it will show error because we cannot concatenate string and integer value.

We can fix it by changing 99 as string (i.e.) ‘99’