***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->**

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

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

**Ans:** String is a datatype which refers to a type of data i.e. a combination of 1 or more characters.

Whereas a variable is like an empty container that can store any kind of data(which might or might not include a string type data, which is a possibility regardless)

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

**Ans: 1.** *Numerical Datatypes*, which call store integer or floating point or complex type of numbers

int- e.g., 1,2,3,4,5,6,7,21321, -232, -31

float- e.g., 11, 22.443244, -1212.3232

complex- e.g., 123+5j, -2321.2+5j

**2.***string Datatype (str class in python)*, is a datatype that defines a string of characters, or a set of 1 or more characters. It is enclosed in single quotation mark or double quotation marks for identification in python (and most other programming languages) e.g., “s”, ’sdasdsarse’, “I am OKEY”

**3.** *Boolean type (bool class in python),* is a type that can only store true(translates to 1 in int) value or false value (translates to 0 in int).

**4.** *Sequence types:* Sequence types identify a collection of data being stored under a common identifier.

list: [‘a’,1,1.323,true]

tuple: (‘a’,1,1.323,true)

set: {‘a’,1,1.323,true}

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

**Answer:** Expressions are made up of operators and operands.

Operators- specify the type of operations to be performed

Operands- are the data on whom the operation will be performed

All expressions perform a certain kind of operation they allocated and programmed to perform on its provided operands, and it results in a/returns a third value all of the time.

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

**expression and a statement?**

**Answer:** A statement doesn’t return any value. An expression returns a value.

A statement might or might not require data to perform operation on. An expression always requires data to perform it’s designated operations on to return an output

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

**bacon = 22**

**bacon + 1**

**Answer:** 22 (as the result of becon + 1 operation was never stored into anything thus becon variable was never updated)

**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?**

**Ans:** Because according to identifier naming restrictions in python a variable name can’t begin with a number.

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

**version of a value?**

**Ans:** a=”10”

# To convert to int value from any other datatype we use int() function.

Int(a) -> results to 10

# To convert to floating point you use float() function.

float(a) -> results to 10.0

# To convert to string version, we use str () function

str(10202) -> results to “10202”

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

**‘I have eaten ‘+ 99 + ‘ burritos.’**

**Ans:** Addition not possible for a string and an integer. Implicit type casting doesn’t apply here.