**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 : ‘hello’ , -87.8 , 6

Expression : \* , - , / , +

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

Ans. Since in python everything is an object, datatypes are actually classes and variables are instance (object) of these classes, therefore string type datatype is also a class which can have a particular value

A variable is something that can hold a value. A string could be one of those values.

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

**Ans.** Following are the standard or build-in data type of python:

1. Numeric: represent data which have numeric value. Numeric value can be integer, floating or even complex numbers
2. Sequence type: sequence is the ordered collection of similar or different data types. It is of several types-

* String : a string is a collection of one or more characters put in a single quote, double-quote or triple quote
* List: are like the arrays, declared in other languages which is a ordered collection of data. But it is very flexible as the items in a list do not need to be of same type.
* Tuple: just like list , tuple is also ordered collection of python objects. The only difference is that tuples are immutable(i.e., it can’t be modified after it is created).

1. Boolean: with two built-in values, True or False
2. Set: unordered collection of data types that is iterable, mutable, and has no duplicate elements.
3. Dictionary: unordered collection of data values , used to store data like map, unlike other datatypes which hold single value, it holds key-value pair.

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

**Ans.** It is a combination of values, variables, operators, and calls to functions. Expression needs to be evaluated, and its evaluation produces a value. This expression is evaluated as per the precedence of its operators, so that if there is more than one operator in an expression , their precedence decides which operation will be performed first. Eg: x = 1+2, y x+z, c = a+int(b) etc

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

Ans. Expression evaluate to a value whereas statements perform action

An expression can be made of several expressions but a statement cannot be made of another statement.

Results from the evaluation can be printed, but here result from the evaluation cannot be printed.

Expressions usually have a type in most programming languages whereas statements are of the type void

Expressions ate mostly defined by the user, while most statements are already predefined in the programming language

Examples: expression- x= 2+3, “hi”+”friend”, x\*\*y, etc

Statements- x =5, if a>5:……., while true ……..,return s etc

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

**bacon = 22**

**bacon + 1**

Ans. 22

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

**'spam' + 'spamspam'**

**'spam' \* 3**

Ans. ‘spamspamspam’ and ‘spamspamspam’ respectively

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

Ans. Rules for Python variables:

* A variable name must start with a letter or the underscore character
* A variable name cannot start with a number
* A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ )
* Variable names are case-sensitive (age, Age and AGE are three different variables)

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

Ans. Suppose a = 12, which is int datatype

b = Float(a), will make a “b” variable of float datatype

c = str(a), will create a ‘c’ variable of string datatype

similarly, d = int(c) will create a ‘d’ variable of int data type

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

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

Ans. As concatenation of string with integer is not possible