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: A **Variable is** a store of information, and a **String is** a type of information you would store **in a Variable**.

3. Describe three different data types.

Ans :Following are the standard or built-in data type of Python:

Numeric: In Python, numeric data type represent the data which has numeric value. Numeric value can be integer, floating number or even complex numbers. These values are defined as int, float and complex class in Python.

- **Integers** – This value is represented by int class. It contains positive or negative whole numbers (without fraction or decimal). In Python there is no limit to how long an integer value can be.
- **Float** – This value is represented by float class. It is a real number with floating point representation. It is specified by a decimal point. Optionally, the character e or E followed by a positive or negative integer may be appended to specify scientific notation.
- **Complex Numbers** – Complex number is represented by complex class. It is specified as *(real part) + (imaginary part)j*. For example – 2+3j

Sequence Type: In Python, sequence is the ordered collection of similar or different data types. Sequences allows to store multiple values in an organized and efficient fashion. There are several sequence types in Python –

+ String
+ List
+ Tuple

1) String

In Python, Strings are arrays of bytes representing Unicode characters. A string is a collection of one or more characters put in a single quote, double-quote or triple quote. In python there is no character data type, a character is a string of length one. It is represented by str class.

2) List

Lists are just like the arrays, declared in other languages which is a ordered collection of data. It is very flexible as the items in a list do not need to be of the same type.

3) Tuple

Just like list, tuple is also an ordered collection of Python objects. The only difference between type and list is that tuples are immutable i.e. tuples cannot be modified after it is created. It is represented by tuple class.

Boolean

Data type with one of the two built-in values, True or False. Boolean objects that are equal to True are truthy (true), and those equal to False are falsy (false). But non-Boolean objects can be evaluated in Boolean context as well and determined to be true or false. It is denoted by the class bool.

Set

In Python, Set is an unordered collection of data type that is iterable, mutable and has no duplicate elements. The order of elements in a set is undefined though it may consist of various elements.

Dictionary

Dictionary in Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element,

Dictionary holds key:value pair. Key-value is provided in the dictionary to make it more optimized. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a ‘comma’.

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

Ans: An expression is a combination of values, variables, and operators. It evaluates to a single value.

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

Ans: A statement is a complete line of code that performs some action, while an expression is any section of the code that evaluates to a value.

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'

‘spamspamspam'

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

Ans: Because variable name cannot start with number

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

Ans: int(value), float(value) and str(value)

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

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

Ans: string and integer cannot be added.

'I have eaten ' + str(99) + ' burritos.'