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?

* **String –** It is/are character/ set of characters which contains alphabets, numbers, etc. Generally in python, its denoted in inverted commas
  + Ex – ‘Hello’, “123”, ‘’’ This is a sample ’’’
* **Variable -**  It is a storage container which stores values when assigned.
  + **Ex –** a = 3, y = ‘Akhil’, I = 4i +6

3. Describe three different data types.

* **Numeric –** Numeric values are been represented. I.e., integers (int), floats(float), complex(complex) numbers.
  + **Ex -**  1, 12.35, 4i+6
* **Text -** Strings(str), these are a sequences of character data, these are denoted using single, double and triple quotes
  + **Ex -**  ‘a’, “Hello”, “Hello world’’’
* **Boolean –** Boolean type may have one of two values, True (1) or False (0).
* Apart from the above mentioned, there are Dictionary, Set, List, Tuple, etc.

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

Expressions is a combination of values, variables, operators and calls to functions. These are representations of value, which helps to assign a value, in Python, expressions only contain identifiers literals and operators.

If you type an expression at the Python prompt, the interpreter evaluates it and displays the results, which is always a value. Ex -

* abc = “hello”
* z = 2+2

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

**Expression** – Expression **represent something**, like a number, a string or an instance of class. In short, any value is expression.

**Statement –** Anything that **does something** is a statement. Any assignment to a variable or function call is a statement. Any value contained in that statement in an expression.

So, in the above example, 10 is a simple expression, since it contains no operations. Therefore, **spam** is just assigned to 10

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

bacon = 22

bacon + 1

Solution – bacon will contain number **23**

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

'spam' + 'spamspam' = spamspamspam

'spam' \* 3 = spamspamspam

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

Python, variable cannot begin with number

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

* Interger – int()
* Floating-point number – float()
* String – str()

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

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

In Python, only Strings can be concatenated with other strings, and since 99 is a number, the whole expression causes error.

* Correct method – ‘I have eaten’ + str(99) + ‘burritos’