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?

Variables are symbols that you can use to store data in a program. Strings are data, so we can use them to fill up a variable. To create a string, put the sequence of characters inside either single quote, or double quotes, and then assign it to a variable.

3. Describe three different data types.

* **Numeric data types**: *int, float, complex*
* **String data types**: *str*
* **Sequence types**: *list, tuple, range*
* **Binary types**: *bytes, bytearray, memoryview*
* **Mapping data type**: *dict*
* **Boolean type**: *bool*
* **Set data types**: *set, frozenset*

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

An **expression** is a combination of values (or variables, operators, calls to functions which evaluates to a value, e.g., 1 + 2. Expressions need to be evaluated. If we ask Python to print an expression, the interpreter evaluates the expression and displays the result.

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

Expressions need to be evaluated. If we ask Python to print an expression, the interpreter evaluates the expression and displays the result.

A Statement is the smallest executable unit of code that has an effect, like creating a variable or displaying a value. Each and every line of code that we write in any programming language is called a statement.Any ***Instruction*** that a python interpreter can execute (carry out) is called a **Statement**.

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

bacon = 22

bacon + 1

output will be 23 but the variable bacon contains 22. The expression does not reassign the value in bacon .

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

'spam' + 'spamspam' : This is string concatenation ,so output will be **spamspamspam**

'spam' \* 3 :This is string multiplication , so output will be **spamspamspam**

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

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?

 The int(),float(),and str() functions will evaluate to the integer,floating-point number,string version of the value passed to them.

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

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

**TypeError**: can only concatenate str (not "int") to str.

Concatenation can only takeplace with string here integer value 99 is used. We can fix it by typecasting.

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