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 (multiplying operator)**

'hello' : **Value (String)**

-87.8 : **Value (Float)**

- : **Expression (Subtraction Operator)**

/ : **Expression (Division Operator)**

+ : **Expression (Addition Operator)**

6 : **Value (Integer)**

2. What is the difference between string and variable?

**Strings: Something under a single quote (‘ ‘) or double quote (“ ”) is a string.**

**Variables: These are the user-defined storage for storing data in the program. It can be an alphabet (ex. D, fym etc.) or a number that begins with an alphabet (ex. F34, rd2 etc.)**

3. Describe three different data types.

**a) Float b) Strings c) Integer d) Set e) Boolean f) List g) Tuple h) Dictionary**

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

**Abs expression is made up of values, variables, functions and operators.**

**Ex: a=20, b=30, c=a+b**

**An expression returns a value by evaluating itself.**

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

**Every line in a code is a statement but every statement cannot be an expression.**

**Expression evaluates itself and returns a value but a statement executes something (like print())**

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

bacon = 22

bacon + 1

**bacon= 22  
print(bacon+1)**

**Return: 23**

***I am using PYCHARM and on giving print command these lines printing 23.***

**22 was an integer (python automatically detects for integer) and the same data type we are adding to that. So finally, bacon will contain 23.**

**bacon= 22  
bacon+1**

**Return: NO RESULT ONLY BLANK SCREEN**

**This means we need to reassign bacon+1 to a variable and to get some results printed on the screen.**

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

'spam' + 'spamspam'

'spam' \* 3

1. **Print(‘spam’ + ‘spamspam’)**

**Return: spamspamspam (because all are of strings)**

1. **Print(‘spam’ \* 3)**

**Return: spamspamspam (as multiply operation do work with the strings as well)**

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

**It is a rule that a variable name cannot start with a number in python.**

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

**For integer: int()**

**For Floating Point number: float()**

**For string: str()**

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

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

**Because there are 2 different types of data types used (i.e. two strings and the other one is an integer) and two different data types cannot be concatenated with +.**

**We can resolve this issue by converting the data type of integer into a string. This is called type casting.**

**‘I have eaten ’ + str(99) + ‘burritos.’**

**Result: I have eaten 99 burritos.**