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?

A string is a sequence of character or characters which is a data type in python whereas variable is a place holder or a memory location where in we can store the data types like strings, int etc.

Ex: person = “Nagendra”;

In this scenario person is the identifier/name given to memory location holding string value “Nagendra”.

3. Describe three different data types.

Int : Used to store numbers ex: i = 45.

String : Used to store alphanumeric items. Ex : name = “Nagendra”

Dictionary : Used to store Key value Pairs. Ex : dict = { “age”: 22, “name” : “Nagendra” }

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

An expression is a combination of values, variables, operators, and calls to functions. Expressions evaluates to particular values.

Ex: k = 2+3+1 +(4-2) - (5-4); here we have expression on RHS side which will be evaluated to value 7. While evaluating expression, Precedence and Associativity of Operators is followed.

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

An “**expression**” is a combination of values and functions that are combined and interpreted by the compiler to create a new value, as opposed to a “**statement**” which is just a standalone unit of execution and doesn't return anything.

Ex: spam = 10 is an statement where we do not have any expression to be evaluated. but consider like spam = 10+30; here we have a expression on RHS to be evaluated.

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

bacon = 22

bacon + 1

first line is a statement which does store 22 in bacon variable where as second line is an expression that evaluates to 23 but it is not stored anywhere so bacon contains 22 after running this code.

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

'spam' + 'spamspam'

'spam' \* 3

first term: 'spamspamspam'

second term : 'spamspamspam'

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

According to

**Rules for Python variables:**

A variable name must start with a letter or the underscore character

A variable name **cannot start with a number(like 100)**

A variable name can only contain alpha-numeric characters and underscores.

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?

int(), float(), str()

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

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

We cannot concatenate string with an integer. So that causes error here. We can fix it by changing 99 integer to type string here.

'I have eaten ' + ‘99’ + ' burritos.'