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'string

-87.8 float ( not integer)

- expression

/ expression

* expression

6 integer

2. What is the difference between string and variable?

Strings are sequence of characters. For example, my name “SREELAKSHMI” is a String.

Variable is a memory space to store values. For example, aa, a1,Name\_ are names of variables.

3. Describe three different data types.

* Number- Stores numeric values. There are four types of number data. They are integer, float, long, complex

Int: stores Integer eg:- a = 20

Float: stores Floating point numbers eg:- a = -37.56

Long: stores long numbers eg:- a= 205488345L

Complex: stores complex numbers eg:- a = 5+6j

* String- Stores sequence of character within a quote. eg:- **p** = ‘This is my first program’. The **p** is the string variable
* Tuple-stores a collection of the elements of different non-editable data types

It uses () simple parenthesis and the elements that need to be stored should be entered inside the store () with a comma in between.

eg:- t1 = tuple() //Empty tuple

t2 = (1, 5, ) // Two element tuple

t3 = (1, 2,(3,4)) // Nested tuple

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

Expression consists of contants, variables, operators, and when evaluated gives a single value. eg:- The variable to store **a** = 2 +3 = 5, Here 2, 3 are two integers and + is the mathematical operator. The complete expression when evaluated output is stored as 5 under the variable **a.** There are :

constant expressions,contains constant values ( eg:- 5,10)

Integral expression, produces integer results ( eg:- x, x\*y)

Floating expressions, produces floating point results( eg:- 10.35, x+y)

Relational expressions, produces boolean results ( eg:- x+y<=2). The expressions may take true or false values

Logical expressions, produces combined relational expressions( eg:- x>y && x+y<=2)

Pointer expressions, produces address of the vaules( eg:-&x)

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

Expression consists of contants, variables, operators, and when evaluated gives a single value.

Statement is a programming instruction followed by an action.

Here spam = 10, gives output as 10, if you type spam in python command window

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

bacon = 22

bacon + 1

**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?

Variable name should start with letter(a-zA-Z). that’s why eggs is a valid variable name.

Variable name should not start with number , here it is integer. that’s why 100 is an invalid variable name

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

Integer , it is int

Floating-point number, it is float

String – str(), with name of variable inside the parenthesis

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

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

Since 99 is an integer , as we cannot concatenate two different datatypes. Here it is string 'I have eaten ' , ' burritos.'and integer 99

We need to rewrite the code as 'I have eaten ' + str(99) + ' burritos.' It will display

'I have eaten 99 burritos.'