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 variable is basically name given to the memory location of the stored value inside memory.

String is a value enclosed between quotes ‘ ’ or “ ” in python

3. Describe three different data types.

Int => It is one of the basic numerical data type to store “Integer” value eg:10

Float => It is one of the basic numerical data type to store “Decimal” value eg: 10.0

Str => It is one of the basic data type to store “text” value eg: ‘cat’

List => It is a data type used to store multiple heterogenous elements i.e it can store sequence of int, float, text values as well as it can store complex data types such as another list, set etc as an element inside it.

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

An **Expression** is a sequence or combination of values, variables and operators.

Expression always produces or returns a result value.

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

An **Expression** is a sequence or combination of values, variables and operators.

Expression always produces or returns a result value.

Expression will not change the state where as statement changes the state of variable.

A statement is do something like creating variable, printing value etc.

Eg of Statement : x=10 Eg of expression: x+10

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

bacon = 22

bacon + 1

The variable bacon contain value 22 as we are not re-assigning bacon+1 to bacon

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

'spam' + 'spamspam'

'spam' \* 3

Both will return ‘spamspamspam’

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

“eggs” satisfies all variable creation rules, where 100 doesn’t satisfy variable creation rule that a “variable name cannot start with number or digit”.

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

int(), float(), str() functions can be used to type cast values to integer, floating-point, string respectively.

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

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

The expression causes an error because we are trying to add “integer 99” to strings, We cannot use ‘+’ operator between string and integer.

We can fix it by putting 99 inside quotations like ‘99’ to make it as string which solves the issues as we are finally doing string concatenation by converting 99 (integer) to ‘99’ (string)