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.

\*

'hello'

-87.8

-

/

6

Answer: Values: ‘hello’, -87.8,6

Expression: \*, -, /, +

2. What is the difference between string and variable?

Answer: String is a data type that represents characters enclosed in quotes while variable is a name that refers to the value stored in memory.

3. Describe three different data types.

Answer: Three different data types are:

1.Integer : Integer is a whole number without decimals. Example : 1,2,3

2.String : String is a data type that represents characters enclosed in quotes. Example : ‘Hello’, ‘Python’,etc

3.List : List is collections of items that are in order and are mutable. We can create list by enclosing a list of items in square brackets ([]). Example : fruits : [‘Apple’,’Mango’,’Banana’]

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

Answer: Expression may be combination of variable, operators, values and function call that can be evaluated to produce result.

It is used extensively to control the program flow, perform calculations and manipulate data.

Example :

x = 5 # simple expression

y = x + 3 # complex expression

z = abs(y) \* 2 - 1 # complex expression with function call

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

Answer : assignment statements, like spam = 10 is an statement because it assigns 10 in the spam variable and it does not produce a value.

The main difference between expression and a statement is that the expressions produce a value while statements preforms an action or a sequence of actions.

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

bacon = 22

bacon + 1

Answer : the bacon variable will still contain 22 as we are not assigning bacon+1 value in bacon variable or any new value in bacon variable.

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

'spam' + 'spamspam'

'spam' \* 3

Answer : Input : 'spam' + 'spamspam'

Output : ‘spamspamspam’

Input : 'spam' \* 3

Output : ‘spamspamspam’

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

Answer : A variable name should not start with a digit but must start with letter or an underscore. That’s why eggs is a valid name but 100 is invalid.

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

Answer : int(), float(), str() can be used to get the integer, floating point number, or string version of a value.

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

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

Answer : Addition happens between same data type. In this case 99 is integer while the other two are string. To fix this, we can convert 99 into string by enclosing it within quotes.

Solution : 'I have eaten ' + ‘99’ + ' burritos.'