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' : Values

-87.8 : Values

- : Expression

/ : Expression

* : Expression

6 : Values

2. What is the difference between string and variable?

String is a datatype whereas variable is a memory location to store values

3. Describe three different data types.

String data type : this data type contain values which are string. Strings can be a combination of characters, numbers etc.(eg: ‘hello123world’, ‘99’)

Integer : this data type contains only integers (eg: 1,2,-1,-5 etc)

Boolean : it contains either True or False. Variable stores an output of a query statement  
(eg: a=1  
if a=1: 🡪 True)

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

Expression are made of operators, values and string (eg: hi\*3, 3+4 etc)

Expression do operation on the given data preferably of same datatype.  
(eg: 3+4 = 7, ‘Hi’\*3=’HiHiHi’)

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

Statement will assign value to the variable whereas expression do operation on values ( a= 10 🡪 assignment statement, a=3+4 🡪 expression)

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

bacon = 22

bacon + 1

Ans: bacon will contain the value 22

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

'spam' + 'spamspam'

'spam' \* 3

Ans: 'spam' + 'spamspam'🡪 spamspamspam  
 ‘spam’\*3 🡪 spamspamspam

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

eggs is a valid name for variable because it starts with an alphabet and follows variable rule whereas 100 starts with a number which is a violation of variable name in python.

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

Int() 🡪 eg: a=’10’ int(a) 🡪 10  
float()🡪 eg: a=10 float(a) 🡪 10.0  
str() 🡪 eg: a=10 str(a) 🡪 ‘10’

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

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

The error occurs because of an attempt to add two different datatypes  
it can be rectified by converting the number to a string  
  
'I have eaten ' + ‘99’ + ' burritos.'