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

- : Expression

/ : Expression

* : Expression

6 : Integer

2. What is the difference between string and variable?

**A:** A string is a data type in python whereas the variable is data holder. Variable can store any type of data in it.

3. Describe three different data types.

**A:** The most common data types used in Python are:  
**Integer -** The whole numbers (signed and unsigned) Eg. 1,2,5,10,-2,-4

**String -** A stream of alphabets. Eg. “This is a String”

**Float -** Numbers with decimal points and factorials. Eg. 1.5,-5.2,4.0

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

**A:** Expression is made up of mathematical and arithmetic operators. The expression defines a function of a variable which has certain input and an output relationship.

Eg. A = 1 + A

Here the expression is to increment the value of variable A by 1. The value held in A is added by 1 and again assigned back to A. This expression consists of 3 components viz.

A: Variable, 1: Constant, + : Addition Operator, = : Assignment operator.

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

**A:** Expression has some operation with a certain input and output. Like stated in Question 4. The statement ‘spam=10’ is a definition where constant 10 is assigned to variable spam.

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

bacon = 22

bacon + 1

**A:** 22

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

'spam' + 'spamspam'

'spam' \* 3

**A:** 'spam' + 'spamspam' = spamspamspam

'spam' \* 3 = spamspamspam

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

**A:** eggs is an object and can hold any datatype unless it is defined as ‘eggs’. 100 is an integer and will cause problem while python parses the same.

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

**A:** for integer: int(value), for float: float(value), for string: str(value)

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

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

**A:** The above expression is trying to concatenate strings with integer. This is not permitted as for concatenation of string, the elements should be of same datatype. It can be corrected as followed:

'I have eaten ' + str(99) + ' burritos.'