**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**

**Ans.** From the above characters or elements following are the values:-

‘hello’

-87.8

6

And following are the expressions:-

\*

-

/

+

**2. What is the difference between string and variable?**

**Ans.** A string is a data type that contains all alphabetic characters as well as all other characters besides integer and floating-point numbers. All characters that cannot be categorised as numbers or that do not have any numerical values are stored in strings. A string is entered inside the single or double coutes.   As in "this is a string." A variable, on the other hand, is a phrase used to denote a name or to store a specific piece of data or data frame. A variable can be a single letter or a complete name with letters, digits, underscores, etc. For instance, x = 2+3, then x is a variable name with the value of 2+3, i.e. 5.3. Describe three different data types.

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

**Ans.** An expression is made up of a variable, operators, and some methods. These are used in a syntax to evaluate the desired value for the expression. An expression basically evaluates the syntax an returns the result value.

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

**Ans.** An expression is used in a syntax and that can be used to evaluate to a value. The basic expressions are method calls and mathematical operations. A statement is a code used for executing a specific instruction which just tells the computer what to do. Like the example, spam = 10 in this statement the code tells the computer to just assign the value 10 to the variable spam.

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

**bacon = 22**

**bacon + 1**

**Ans.** The variable bacon still contains the value 22 because the second line just add the value one with the value of bacon i.e. 22 and returns the result. There is no code to overwrite the value of bacon to any other value.

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

**'spam' + 'spamspam'**

**'spam' \* 3**

**Ans.** The result for both the line of code would be ‘spamspamspam’ . In the first line both the string are concatenated and in the second line the string is repeated 3 times.

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

**Ans.** A valid variable name should start with a alphabetic character or a underscore and should only contain alpha-numeric character or underscores, that is why eggs is a valid variable as it satify both the conditions and 100 is invalid as it start with a number.

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

**Ans.** Following are the three functions:

int() – this function is used to get the integer version of any value(only numeric value is possible)

float() – this function is used to get the floating-point number version of any value(only numeric value is possible)

str() - this function is used to get the string version of any value(any value is possible)

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

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

**Ans.** The above expression will give an error because we are trying to concatenate the two different data types i.e. first is a string then it a integer and then it is a string. Python only allows two concatenate similar data type only, either integer with integer or string with string, so this can be fixed by converting the middle integer value to the string version. The correct expression would be:-

‘I have eaten’ + ‘99’ + ‘burritos’ .