**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.**

\* Mathematical Operator\_Multiplication

'hello' Value\_String

-87.8 Value\_Float

- Mathematical Operator\_Substraction

/ Mathematical Operator\_Division

* Mathematical Operator\_Addition

6 Value\_Integer

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

Variable is an alphabet or a word to which a value is assigned. If the value assigned is in between “ ” or ‘ ’, then those are known as strings. A number will be also be considered as a string if it is assigned to a variable with help of “ ” or ‘ ’

Example:

x = “Bharat”

x will be a variable and Bharat is a string.

**3. Describe three different data types.**

Data Type 1: Integers (eg. 1, 2,3 ,…..) , Float (2.31, 3.14, and so on), Complex Numbers(1+2j)

Data Type 2: Strings (“bharat”, “Dogra”, “Varnab”), list ["apple", "banana", "cherry"], tupple ("apple", "banana", "cherry"), dictionary {name="John", age=36},

Data Type 3: Boolean i.e. True or False

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

Combination/Sequences of operators and operands, interpretate some values, these combinations are known as expressions. Hence expressions are made up of operators and operands.

All expressions evaluate (that is, reduce) to a single value.

Example: Expressions does the following

1. Constant Expressions can be used to assign constant values.
2. Arithmetic Expressions is a combination of numeric values, operators, and sometimes parenthesis, giving numeric results
3. Integral expressions produces only integral results
4. Floating Expressions produces float results
5. Relational expressions uses relational operator (> , < , >= , <=), to give Boolean values as result.

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

An expression evaluates to a single value, that means it will return. A statement does not.

2\*5 is an expression

print(2\*5) is a Statement

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

bacon = 22

bacon + 1

Output will be 23, but the **value of bacon will be unchanged.**

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

'spam' + 'spamspam'

'spam' \* 3

Both will lead to ‘spamspamspam’, as an output

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

Variable names can begin with an alphabet, or word but not with an integer. Hence eggs is a valid variable name and 100 is invalid because its an integer.

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

int(), float() and 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.'

The above statement contains str + int + str. To concatenate we require all the strings, hence to resolve the error we can use ‘99’ instead of 99.