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?

Variable is a name given to the memory location which stores any value such as integer, float, string etc.

Eg. A=10

Here A is a variable.

String is a data type where the value is enclosed in single or double quotes.

Eg. b= ‘Data Science’

Here b is a variable and ‘Data Science’ is a string.

3. Describe three different data types.

There are three different data types:

* Integer
* Float
* String

Integer – this data type includes positive as well as negative whole numbers.

E.g. num = 10

Z= -47

Float – this data type includes fractional and decimal values.

E.g. frac = 5.67

pi = 3.14

String – this data type includes all the numeric values or words spaces which are enclosed in double quotes

e.g. str= ‘My name is Prem’

str2 = ‘My roll no. is 39’

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

An expression consists of variables, operators, and values(int, float, string) which altogether produces a result. They perform some calculation.

Variable – a,b,c

Operators - +, -, /, \*, % etc.

Values – It can be of any data type integer, float, string.

When an expression is evaluated returns the result. This result can be of any value.

E.g. a = b+c

In the above eg we are performing the addition operation on the variables b and c and are storing its value in the variable a

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

Expression

An expression is a combination of variables, operators and values. They always returns a value.

Eg. b+c

Statement

A statement can be anything a line of code that represents a command, an assignment, a loop, or a control flow construct. They may or may not produce a value. Eg. assignment statement. ( b = 10)

Also expressions can be used within the statements

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

bacon = 22

bacon + 1

**bacon = 23**

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

'spam' + 'spamspam'

O/P – ‘spamspamspam’

'spam' \* 3

O/P – ‘spamspamspam’

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

Let us first look at some of the rules which are used for naming a variable.

1. We cant start variable name by a number.
2. We can use a combination of (0-9), (a-z), (A-Z) and the symbol (\_)
3. No other special character such as @, $, #, & etc can be used expect for underscore(\_)

So by looking at the rule we can specify that eggs is a valid variable name as it only consists of alphabets.

Whereas the name 100 is not valid as the variable name cannot start with a number.

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

Three functions can be used to get the integer, floating-point number, or string version of a value are:

int(), float() and str()

eg.

val = 3.14

new\_int = int(val)

print(new\_int)

O/P – 3

val = 54

new\_float = float(val)

print(new\_float)

O/P – 54.0

val = 32

new\_str = str(val)

print(new\_str)

O/P – ‘32’

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

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

The error generated is : can only concatenate str (not "int") to str

To correct it we can make it as following:

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