**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**

**------------------------------------------------------------------**

**\*, -, /, +** are mathematical operators hence these are **Expressions.**

**‘hello’, -87.8, 6** are string, float and integer respectively hence these are **values**.

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

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**Variables**

These are the storage of information or data.

Variable only contain letters, digits, and underscore.

First character of the variable cannot be a digit.

Variables can be used to store string.

Example= variable

**String**

It is a datatype that contain characters.

String can contain any character of the keyboard.

First character of string can be a digit.

To declare a character string we have to enclose it in single quotes, double quotes, or triple quotes.

Example= ‘variable’

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

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**Integers**

Integers are the whole numbers.

They do not contain the fractional (decimal) component.

Example= 12, 151

Command to get integer is – int(value)

**Floats**

floats are the real numbers.

They contain the decimal component.

Example= 50.12, 23.448

Command to get the float is – float(value)

**String**

String is the sequence of the character data.

Strings are declared by enclosing the characters in quotes

Example= ‘Kailash’, “Mohit”

Command to get string is – str(value)

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

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Expression is made up of ‘values’ ‘variables’ and ‘operators’.

Example x= x+10

Above expression consist of a variable ‘x’, an operator ‘+’, and a value ‘10’

The expression in python produces some value or result after being interpreted by the python interpreter.

Expressions are used to perform operations on data such as mathematical calculations, logical evaluations, and string manipulations.

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

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**Expression**

Anexpression usually refers to a piece of code that can be evaluated to a value, and is composed of variables, operators, and values.

To evaluate expressions, we need to consider the precedence rule, or order of operation.

**Statement**

A statement refers to a piece of code that execute a specific instruction or tells the computer to complete a task.

To evaluate a statement, we take into consideration the order and context in which statements are defined. Unlike expression, statements are not evaluated based on the order of operation.

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

**bacon = 22**

**bacon + 1**

**-----------------------------------------------------------------------------------------------------------------------------------**

bacon= 22

bacon+ 1

after running the following code result will be

23

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

**'spam' + 'spamspam'**

**'spam' \* 3**

**------------------------------------------------------------------------------------------------**

‘spam’ + ‘spamspam’

**Result=** ‘spamspamspam’

‘spsam’\*3

**Result=** ‘spamspamspam’

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

**------------------------------------------------------------------------------------------------**

Variables are the storage of information or data. They can contain ‘letters’, ‘digits’, and ‘underscore’ but they cannot start with a digit.

Therefore,

100 is an invalid variable as it starts with a digit.

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

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To get integer, floating point number, or string version of a value we have following function-

int(value) to get integer version of a value.

str(value) to get string version of a value.

float(value) to get float version of a value.

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

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

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In the given expression**, 'I have eaten ' + 99 + ' burritos.'**

‘I have eaten’ and ‘burritos’ are = string datatype

99 = integer datatype

Since, we know that we can only concatenate similar datatype,

Therefore, the given expression is causing an error.

To remove the error, we have to convert 99 to a string datatype i.e. by enclosing 99 in single quotes 'I have eaten ' + ‘99’ + ' burritos.'

Or by running the following command

print(‘I have eaten’ + str(99) + ‘burritos.’)