**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 1.

\* 🡪 Operator

‘hello’ 🡪 Value

-87.8 🡪 Value

- 🡪 Operator

/ 🡪 Operator

+ 🡪 Operator

6 🡪 Value

As per my understating none of the above is an expression because expression must involve

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

Ans. String is an array of bytes representing Unicode characters.

Variable is a named reference to an object.

String is the actual data which is stored in memory. Variable does not contain the value itself but the reference to the value.

Example: x = ‘Hello’

Here x is the variable containing the address of memory location holding ‘Hello’. ‘Hello’ is the string. We can also call it as an object of class String.

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

Ans.

Int – Int datatype holds whole numbers without any decimals.

Example: a = 10

Float – Float datatype contains the decimal numbers.

Example: a = 25.8

Boolean – Boolean datatype contains the values True or False.

Example: a = 1 > 2

1 > 2 evaluates to False and stored in variable a. Now a is a variable of datatype Boolean.

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

Ans. Expressions are made of operators and operands that can be evaluated and produce a value.

Example: a = 2 \* 2

Here 2 \* 2 is an expression. It is evaluated to 4.

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

Ans. An **expression** is any valid combination of symbols that represent a value. An expression represents something which Python evaluates and produces a value.

Examples of expression:

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A + 5

3 \* 5

**Statement** is a programming instruction that performs an action.

While expression represents something, statement does something.

Examples of Statement:

Print(“hello”)

If b > 2

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

**bacon = 22**

**bacon + 1**

Ans. 22 (Because bacon + 1 expression evaluates to 23 and printed but since it is not stored in bacon. It still contains 22 after the code execution completes.)

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

**'spam' + 'spamspam'**

**'spam' \* 3**

Ans.

spamspamspam

spamspamspam

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

Ans. Variable names 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?

Ans.

a = 10

int(10)

float(10)

str(10)

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

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

Ans. + operator accepts all the arguments of same type. Either all numbers or all strings. If number is provided it will perform addition. If strings are provided it will concatenate them.

Corrected expression: ‘I have eaten’ + ‘99’ + ‘burritos.’