**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.**

**Answers**

* \* is a MATHEMATICAL OPERATOR
* 'hello' – STRING
* -87.8 - FLOAT
  + Is a MATHEMATICAL OPERATOR
* / MATHEMATICAL OPERATOR
* + is a MATHEMATICAL OPERATOR
* 6 - INTEGER

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

|  |  |
| --- | --- |
| **STRING** | **VARIABLE** |
| **It could be anything that is represented within a single or double quotes which is usually assigned to a variable** | **Variable defined to be an identifier to which values could be assigned to store a value in memory location and could be manipulated later** |

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

**1.NUMERIC – Numeric has**

1. int - Integer is any numbers without decimals Ex : 26
2. float - Numbers with decimal values to it. Ex : 88.826
3. complex - It has real number along with imaginary part. Ex : 8+8j
4. bool - It is for conditions when needed to make decisions , Only has true and false, carries the values 1 and 0 respectively

**2.STRING -**

If a value assigned within single or double quotes it is called as string and a string is **immutable . Ex : “priyadharshini” or ‘assignment’**

**3.LIST** – Ex: [ 45,85,69,”assignment” , ‘python’ , 8 +8j]

* A collection of values represented inside square bracket and could be assigned to a single variable,
* List **is mutable** or changeable and
* **ordered sequence** means, once defined, the values inside could not be changed
* List allows **duplicate values** as they are indexed

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

Expressions made of mathematical operators and operands on which operations performed.

Expression ex : x+y -8

+ , - 🡪 Operators

x, y, 8 🡪 Operands

Expressions do a task based on instructions, that is operators given and derive it to a value

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

|  |  |
| --- | --- |
| **EXPRESSION** | **STATEMENT** |
| **Expression contains list of operators and operands and based on operators , the task will be performed**  **Ex : x+y-8** | **Any numbers or expressions assigned to a variable called as statement.**  **Ex: STMT = x+y-8** |

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

bacon = 22

bacon + 1

**Ans : The variable contains the value 23**

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

'spam' + 'spamspam' = spamspamspam

'spam' \* 3 = spamspamspam

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

**Ans:**

**Eggs is a valid variable because = Eggs is a string that can hold a value and it does not have any predefined value to it, it is changeable**

**While**

**100 – is a constant which already an integer could not be changed and it cannot be used as variable.**

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

Integer – int()

Floating point number – float()

String - str()

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

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

**Ans:**

**The above expression causes an error because it is trying to concatenate 2 strings with an integer**

**As datatype is different an integer string concatenation is not possible**

**Solution:**

**It can either by removing 99 or can be replaced with below expression**

**'I have eaten ' + ‘ninety nine’ + ' burritos.'**