**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(multiplication)

'hello' 🡪 values (string)

-87.8 🡪 values (float )

- 🡪 expression (subtraction)

/ 🡪 Expression (division)

* 🡪 Expression(addition)

6 🡪values(int)

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

String is a kind of value or a series of characters which deals with letters, words etc. Specially denoted within ‘ ‘ or “” .

Any value is expressed with a variable for further code processing. The variable stores the value and the value may be int, string, or any datatype. Typically the variable can change its value as per the code or information provided by the computer. Variable can be processed and executed.

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

i) Integer: The integer data type basically represents whole numbers (no fractional parts). There is nothing between 1 and 2 or 2 and 3. Integers can be signed or unsigned. Signed integers store value of positive and negative values, declare with **int** keyword. Unsigned integers, declared with one of the **uint** keywords, can only store non-negative values Integers are commonly represented in a computer as a group of binary digits (bits). The size of the grouping varies so the set of integer sizes available varies between different types of computers and different programming languages, likely int, int8,int16,int32 and int64.

ii) Float: This is a kind of data type that stores negative as well as positive integers with decimal point like 35.6,33.45,26.89,19.10 etc. Float has two sizes as float32 and float64. Float64 has larger size than float32. Default is taken as float64.

iii) String: String is a kind of value or a series of characters which deals with letters, words etc. Specially denoted within ‘ ‘ or “”.

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

Expressions are made up of operators and operands that are interpreted to produce a value.

There may be number of operators in a expression, the precedence of that operator will decide the operation which will performed first. There are number of expressions like, arithmetic, logical, Boolean etc.

Example of an Arithmetic expression:

Sum=X + y (expression: combination of two numeric values using addition operator)

X , y 🡪 numeric value (constant or variable)

Sum🡪 variable storing the value of expression

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

A statement is an opinion or constant which gives a nothing or constant value without any change. A standalone execution that doesn’t return anything.

Expression is the combination of operator or operands, value of expression depends on the operator performance in the syntax. They are interpreted by compiler to get a new value.

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

bacon = 22

bacon + 1

The variable bacon contains an incremented value by unit value. Executing bacon would provide 23 as value. Provided bacon is a integer data type.

**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?**

Variable name cannot start with number. A variable name must start with a letter or an underscore character (\_) . A variable name cannot start with a digit. A variable name can only contain alpha-numeric characters and underscores ( a-z, A-Z , 0-9 , and \_ )

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

**1. Int()**

Syntax-----> p=int(20)

type(p)

Output------> int

**2. Float()**

Syntax-----> p=float(20)

type(p)

Output------> float

**3. Str()**

Syntax-----> p=str(20)

type(p)

Output------> string

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

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

The output will ------> can concatenate only str not with “str” to int.

Converting 99 into str type.

‘I have eaten’+’ ‘+’99’+’ ‘+’burritos.’

Output---------> I have eaten 99 buritos.