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?

Ans:- String or str is a data type and is made up of characters and can include letters, words, phrases, or symbols . A character occupies 1 byte and a string is implicitly null-terminated hence it occupies one more byte than the space or byte occupied by the observable charectors.

For Ex.:- “String”🡪 This is a string .

A variable stores the memory location or the address of the information or values to be to assigned to the variable .

For Ex.:- X=8 🡪 X is a variable and 8 is an integer where 8 is assigned to X and X stores the memory address of the integer 8

3. Describe three different data types.

Three different data type and there descriptions are :-

* Integer:- Int or Integer is a whole number , positive or negative, without decimals, of unlimited length. An integer occupies 4 bytes or 32 bits .
* String:- Str or String is made up of charecters and can include letter , words , phrases, or symbols . A character occupies 1 byte of space and a string is implicitly null- terminated so it will take one more byte than the observable characters.
* Float:- Float is a positive or negative decimal number with unlimited length . A float occupies 8 bytes or 64 bits .

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

Ans:- An expression is a combination of operators and operands that is interpreted to produce some value .

Expressions produce some values with a combination of operators or operands . Hence expressions are representations of value.

For Ex:- c= “India” + “is a great Nation” 🡪 c contains two operands which are strings and a + operator to concate the strings hence variable c contains an expression or address of the value that is “India is a great Nation” .

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

Ans:- An expression is a combination of operators and operand that is interpreted to produce some value , hence expression is a representation of value .

Statement are lines of codes that are provided like creating a variable , displaying a value and whatever operation happens, are based on the statements provided .

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

bacon = 22

bacon + 1

Ans.:- 3

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

'spam' + 'spamspam'

'spam' \* 3

Ans.:- For both of the expressions , the answer will be ( ‘spamspamspam’) and if print statement being used , then it would be ( spamspamspam ) (not inside quotes)

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

Ans.:- Variable name should always start with a character or ‘\_’ (underscore) . Hence eggs is a valid name but 100 is invalid .

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

Ans.:- To get the integer = int()

To get the floating- point number – float ()

To get string – str()

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

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

Ans.:- This expression causes error because the expression contains two strings and one integer and concatenating both of the string with one integer in between will give TypeError

TypeError: **TypeError**: can only concatenate str (not "int") to str

To fix this issue we will have to convert the integer into a string (typecasting).

'I have eaten ' + str(99) + ' burritos.'

Output:-

'I have eaten 99 burritos.'