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:-

The values in the list are:

'hello'

-87.8

6

2. What is the difference between string and variable?

ANS:- String is a data type, which consist of letters, numbers, symbols, and spaces, and is usually enclosed in quotes, either single quotes ('...') or double quotes ("...").

Variable is a container that holds a value. We can assign values to variable, which is stored in computer and can be used in different places throughout program.

3. Describe three different data types.

ANS: Data type represent types of data user want to store.
    There are 5 basic Data types in python:

   1. Integer
   2. Float
   3. Complex
   4. Bool
   5. String

1.Integer: Integer is a numeric value consist of whole number either positive or negative without decimal point. In python when user assigns integer value to name, it treat as integer variable eg:- a=10

                >>>type(a)
                >>><class.int>

Integer values can be assigned to any number system like Binary,Octal,Hexa decimal. There are Inbuilt functions to convert data from one number system to another eg:- Binary to octal etc..

2.String: A string is a sequence of characters, typically used to represent text in a program. Strings are usually enclosed in quotes, either single or double, depending on the programming language. For example, "Hello, world!" is a string in Python.

3.Boolean: A Boolean is a data type that can have one of two possible values: true or false. Booleans are often used to represent logical conditions, such as whether a statement is true or false, whether a value is greater than or less than another value, or whether a certain condition has been met. Booleans are essential in programming because they allow you to make decisions and control the flow of the program based on specific conditions.

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

ANS:- An expression is made up of one or more values, operators, and/or function calls that are combined to produce a new response. It can be as simple as a single value, such as the integer 5, or as complex as a series of nested function calls and operators, such as (2 * (3 + 4)).

Expressions are fundamental to programming because they allow you to perform calculations, manipulate data, and make decisions based on specific conditions.

5. What is the difference between an expression and a statement?

ANS:- Expression is combination of value, variable and operators which when evaluated generate response value. Expressions are fundamental to programming because they allow you to perform calculations, manipulate data, and make decisions based on specific conditions.

Whereas Statement is complete unit of code that perform a specific action or set of action. It is a line or group of lines of code that typically performs a single operation, such as assigning a value to a variable, printing output to the screen, or controlling the flow of the program with conditional statements and loops.

The main difference between an expression and a statement is that an expression produces a value, whereas a statement does not. In other words, an expression is a part of a statement, but a statement is not a part of an expression.

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

bacon = 22

bacon + 1

ANS: 23

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

'spam' + 'spamspam'

'spam' * 3

ANS:- 'spam' + 'spamspam'= spamspamspam

'spam' * 3 = spamspamspam

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

ANS:- According to rules for creating Variable, a variable cannot start with any number.

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

ANS:- int(), float(), str()

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

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

ANS:- In 'I have eaten ' + 99 + ' burritos.'

     String data type is added to integer data type which will throw as

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

     To fix it convert 99 into string 99('99')

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