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.

\* Multiple Expression

'hello' String Value

-87.8 Float Value

- Subtraction Expression

/ Division Expression

* Addition Expression

6 Integer Value

2. What is the difference between string and variable?

A string is a value enclosed in single, double or triple quote and whereas variables are created to store a value which can be string, integer, float, Boolean, list, set, etc. So we can say that variables are symbolic character used to store an object in python.

3. Describe three different data types.

Description of any three data types.

Integer – Integers are numerical data type containing only digits

Float – Floats are numerical data type containing digits and decimal.

String – String are data enclosed within single, double or triple quotes.

Few examples of different built in data types in python

1. String - ‘Hello world’

2. Integer - 56

3. Float - 63.65

4. Boolean - True/False

5. Complex - 3+ 4j

6. List - [34, ‘hello’, 453.6]

7. Tuple - (45, ‘Beautiful’ 65.31)

8. Set - {‘Robin’, 78, 93.2}

9. Dict - {‘a’: 45, ‘b’:38, ‘c’:98}

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

An expression is a combination of values, variables, operators, and function calls that evaluates to a single value. It can be as simple as a single value or as complex as a combination of multiple components.

Expressions can include various elements, such as:

1. Literals: These are fixed values, such as numbers (e.g., 10, 3.14) or strings (e.g., "Hello, World!").

2. Variables: These are symbols that represent a value stored in memory. You can use variables in expressions to perform calculations or combine them with other values.

3. Operators: These are symbols or keywords that perform operations on one or more operands. For example, the addition operator (+), subtraction operator (-), multiplication operator (\*), and division operator (/) are commonly used in expressions.

4. Function calls: You can include function calls in expressions to execute predefined or user-defined functions and use their return values as part of the expression.

When an expression is evaluated, it produces a value. The specific behaviour of an expression depends on the components used. For example, if you have the expression `2 + 3`, it will be evaluated to `5` because the addition operator `+` is used to add the values `2` and `3`.

Expressions can be used in various contexts, such as assigning values to variables, passing arguments to functions, or as part of conditional statements or loops. Understanding expressions and how they evaluate is fundamental to programming in Python and other programming languages.

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

Expression - An expression is a combination of values, variables, operators, and function calls that evaluates to a single value. It can be as simple as a single value or as complex as a combination of multiple components.

Ex - ‘Hello’, x+2

Statement – A statement is a complete unit of code that performs an action. It is a line or block of code that carries out a specific instruction.

Ex - ring = 90

if x < 0:

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

bacon = 22

bacon + 1

There won’t be any changes in bacon because we are not re-assigning the value.

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

'spam' + 'spamspam'

'spam' \* 3

For both the terms the output will be the same - ‘spamspamspam’

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

We can use alphabets, digits and underscore while naming a variable but a variable name can’t start with a digit.

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

To get integer - int()

To get 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.'

We can’t perform concatenation between number and string

The correct format will be

‘I have eaten’ + ‘99’ + ‘burritos’