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?

|  |  |
| --- | --- |
| STRING | VARIABLE |
| * String is a datatype | * Variable is a container to store data values |
| * String can be stored in the variable. | * Variable cannot be stored in the string. |
| * We can use space between the string. | * We cannot use spaces in between a variable.- |
| * String is stored between single inverted commas(‘ ‘) or double inverted commas(“ “) | * There is not such condition related to variable. |

3. Describe three different data types.

Following are the three different data types :

1. String:

* A string is a collection of one or more characters that is put in a single inverted comma or double or triple inverted commas.
* It is represented as <str> class.
* Example:

string = “Hello, World!”

1. List :

* List is one of the “Sequence Data Structure”.
* It is a collection of items such as Strings, Integers or even lists. List are enclosed with square brackets [].
* Each item in the list has an assigned index value and each of the item in the list is separated by using comma.
* Lists are mutable , which means they can be changed or modified.
* Example: list1= [“hello”, 70, 98.52, True, False, “Ineuron”]

1. Tuples:

* These are similar to list like it us also a collection of items such as strings, integers, lists or tuples.
* In tuples, parenthesis is used (). Tuples are immutable which means the data inside the tuples cannot be modified or changed directly.
* To change or modify we have to first convert the tuple into list and then make the changes and then again converting it back into tuple.
* Example:

Tup1= (“Hello”, “programmer”, 50,65.5)

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

Answer: An expression is the combination of operators & operands which is interpreted to give some other value. There are many different types of expressions in Python.

Following are some of the expressions in python:

1. Constant Expression: It includes constant values.
2. Arithmetic Expression: It is an integration of numerical values, operators and also parenthesis. The operators used in these expressions are arithmetic operators such as addition, subtraction, multiplication , division, etc.

Example: x+y -🡪 Addition

1. Integral Expression: It is the expression which ultimately gives integer results after all the operations and type conversions.

Example : a =18

b = 12.0

sum = a + int(b)

print(sum)

OUTPUT: 30

1. Floating Expression: It is an expression which ultimately gives floating point numbers after all the operations or computation and type conversions.

Example: x=18

y = 4

result = x/y

print(result)

OUTPUT: 4.5

1. Logical Expressions: These are the expressions which give the result in True or False. Some logical operators are and, or, not.
2. Relational Expressions: These expressions include relational operators like >, < , >=,<=, == , etc.
3. Bitwise Expressions: These are the expressions where the computations are performed at bit level.

5. This assignment statements, like spam = 10. What is the difference between an

expression and a statement?

Answer: An expression is the operation where it can be reduced to a value like 2+4. But, statement does not evaluates to a value, it executes something. Every statement can be expression but every expression can’t be a statement. Ex: x=5

Print(x)

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

bacon = 22

bacon + 1

Answer: 22

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

‘spam’+‘spamspam’

‘spam’ \* 3

ANSWER: ‘spam’+‘spamspam’ = spamspamspam

‘spam’ \* 3 = spamspamspam

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

Answere: It is because in python integer alone cannot be used to make a variable name . And here, 100 is an integer .

9. What three functions can be used to get the integer, floating-point number, or string

version of a value?

Answer: int() , float() and str()

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

‘I have eaten’ + 99 + ‘ burritos’

Answer: In python, two different data types can not be added. Here ‘I have eaten’ and ‘buritos’ is a string type data and 99 is an integer type data. So, they can not be united in a single line. For this, we have to convert 99 into string and then add. This process is known as “concatenation”.

Example: ‘I have eaten’ + ‘99’ + ‘ burritos’