Ans 1- \*:- mathematical operators

‘Hollo’ – string

-87.8 – integer ( floal value )

- :- mathematical operators.

/ :- mathematical operators.

+ :- mathematical operators

6 :- integer

Ans 2.

Variable

X=10

X=20

So, in the above example, we can say that x is a variable that store the value of 10 interestingly, in python, there a=is no specific command to declare a variable thus, in the above program, the variable x is created when you assign the value 10 to it, meaning that a memory address is allocated to store the value 10.

Strings-

As fir as python is concerned, anything you assign to a variable using quotes (single or double ) will be consider as a string. Thus a string is one of the several type of the variable.

1. A=”10”
2. B=”20”
3. Print (a+b)
4. A=10
5. B=20
6. Print (a+b)

So, in the above example, (a+b) returns 1020 in the first case ( string concatenation of 10 and 20 where as in the second case, it returns 30 since it interprets a and b as integers at run – time.

You can cross check the type of a variable x by using the command type (X).

Ans3.

Python numeric data type is used to hold numeric value like.

1. Int- holds signed integers of

Non- limited length

1. Float- holds floating precision numbers and it’s accurate up to 15 decimal places.
2. Complex- holds complex numbers.

Python list data type-

A list is a data structure in python that is a mutable, or changeable, ordered sequence of elements. Each element or value that is inside of a list is called an item. Just as strings are defined by having values between square brackets [ ].

# list of having only integers

a = [ 1,2,3,4,5,6]

print (a)

# list of having only strings

b= [ “hollo”, “rese” ]

python dictionary –

python dictionary is an unordered set of key value pair dictionaries are written curly brackets in the form by key value it is vary retrieve data in an optimized way among a large amount of data.

Sample dictionary variable

a { 1:”first name”, 2 : “ last name “, “ age “: 33}

# print value having key =1

Print ( a[ “1”])

Print value having key = “ age”

Print (a[“age”])

Ans 4- expression –

A combination of operation and operators is called an expression. The expression in python produces some value or result after being interpreted by the python interpreter. An expression in python is a combination of operators and operands .

Example

X=25 is not equal to a statement

X=x+10 is not equal to an statement

Print (x)

Output :35

In python expressions combine operators, variables. Expressions are used for a variety of purposes including:

Performing calculation

Arithmetic expressions use

Mathematical expressions to compute

Numbers for example 5+3 or (10\*2)-(7/3).

Manipulating data

List and tuple expression create or manipulate data structures using operators and functions.

For example,

My\_\_\_\_\_\_\_ list= [ 1,2,3].

Ans 5-

In python the main difference between an expression and a statement is that an expression evaluates a single value, while a statement is an instruction that the python interpreter executes :

Expression:

A combination of operators and operands that evaluates a single value. Expressions are the building blocks of code, and can be used in many ways.

For example

A string is an expression because it represents the value of the string.

Statement

An instruction that the python interpreter can execute. Statements create side effects to be useful.

For example

A line or a block of code is a statement. Some types of statement include print assignment while if and import statements .

Ans 6-

Bacon = 22

Bacon +1

The variable bacon still contains the value 22.

This is because the line +1 performs the addition but it does not modify the value stored in bacon. To update bacon, you would need to reassign it like this.

Bacon = bacon +1

After this reassignment , bacon would contain 23.

Ans 8-

In python variable names must follow certain rules :

1. A variable name must start with a letter or an underscore (\_). It cannot being with a number.
2. Subsequent characters in a variable name can be letter, number, or underscores.
3. Variable name cannot contain spaces or special characters (e.g. @, #,!,etc,)
4. Variable names cannot be a reserved keywords (e.g.,for,if,while, etc )

Explanation:

Eggs is a valid variable name because it starts with a letter and follows all the rules mentioned above.

100 is an invalid variable name because it starte with a number, violating the first rule

Thus , while eggs is acceptable, 100 would result in a syntax error if used as a variable name.