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'- value

-87.8 - value

- - expression

/ - expression

+ - expression

6 -value

2. What is the difference between string and variable?

A variable is any alphabet or group of alphabet which work as temporary storage locations , a variable is used to represent any value.it is a store of information.

string is a class a reference datatype. it is used to represent text type data. Which is usually enclosed with single or double quotes.

Eg:- a = “Shweta”

Here a is a variable and “Shweta” is a string.

3. Describe three different data types.

Data types are the classification or categorization of data items. python supports the following data types.

1.**Numeric**:- numeric data type represent the data which has numeric value. Numeric value can be integer, floating number or even complex numbers. These values are defined as int, float and complex class in Python.

* **Integer** :- This value is represented by int class. It contains positive or negative whole numbers (without fraction or decimal). In Python there is no limit to how long an integer value can be.

Eg:- a = 5

* **Float**– This value is represented by float class. It is a real number with floating point representation. It is specified by a decimal point.

**Eg**:- b = 3.6

* **Complex Numbers** – Complex number is represented by complex class. It is specified as *(real part) + (imaginary part)j*.

For example : a= – 2+3j

2.**Sequence Type**:- sequence is the ordered collection of similar or different data types. Sequences allows to store multiple values in an organized and efficient fashion**.** There are several sequence types in Python –

* **String**:- A string value is a collection of one or more characters put in single, double or triple quotes.

Eg:- a=”Shweta”.

* **List**:- A list object is an ordered collection of one or more data items, not necessarily of the same type, put in square brackets.

Eg:- b =[1,2,3,4,5].

* **Tuple**:- A Tuple object is an ordered collection of one or more data items, not necessarily of the same type, put in parentheses.

Eg:- a=(2,5.6,’program’,2+3j)

3.**Mapping type**: -

**Dictionary**: -it is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element, Dictionary holds key: value pair. Key-value is provided in the dictionary to make it more optimized. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a ‘comma’.

Eg:- a={a:25,b:89.6,’c’:”Shweta”}

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

Sol. An expression is made up of sequence of literals (strings, numbers, lists, sets, tuples), objects, function calls, identifiers combined with a variety of operators which results in a value regardless of whether of the resulting value is an object, or a number, or even a None.

All the expressions are evaluated as per the precendence of operators.

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

Sol. A statement does something. Statements represent an action or command e.g print statements, assignment statements.

Expression is a combination of variables, operations and values that yields a result value. An expression is something that can be reduced to a value.

for example "1+3" or "a= 1+3".

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

bacon = 22

bacon + 1

sol:= bacon=23

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

'spam' + 'spamspam'= ‘spamspamspam’

'spam' \* 3 = ‘spamspamspam’

Sol.Both will have same value.

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

Sol. In python a variable cannot start with the integer. we should begin with, a string-like alphabet name then integer. e\_100 or eggs100 is valid

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

Sol. str(), int(), float()

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

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

Sol. The above expression contains an integer 99 which cannot be concatenated with the string. To fix it we will have to do the type casting operation.

For eg:- 'I have eaten ' +str ('99') + ' burritos.'