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:** Values: 'hello', -87.8, 6

expressions: \* - / +

2. What is the difference between string and variable?

**Ans:** String is a value representing text, mentioned in single quotes double quotes.

Variable is name that can refer to any value which is declared by developer.

Eg: Name = ‘Divakar’.

Here Name is a variable and ‘Divakar’ is string.

3. Describe three different data types.

In python we have different data type as below.

* Number – Int, Float, Complex
* String
* List
* Tuple
* Set
* Dictionary

**Number – Integer:** In Python, integers are zero, positive or negative whole numbers without a fractional part and having unlimited precision, e.g: 0, 100, -10.

**List:** In Python, the list is a mutable sequence type. A list object contains one or more items of different data types in the square brackets [] separated by a comma. The following declares the lists variable.

Names = ["Jeff", "Bill", "Steve", "Mohan"]

**Tuples:** Tuple is an immutable (unchangeable) collection of elements of different data types. It is an ordered collection, so it preserves the order of elements in which they were defined.

Tuples are defined by enclosing elements in parentheses (), separated by a comma. The following declares a tuple type variable.

Names = ('Jeff', 'Bill', 'Steve', 'Yash')

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

**Ans:** An expression is a construct made up of variables, operators, and method invocations, which are constructed according to the syntax of the language, that evaluates to a single value. ... As you can see from the other expressions, an expression can return other types of values as well, such as Boolean or String.

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

**Ans: Statement**

A statement is an instruction that the Python interpreter can execute. We have seen two kinds of statements: print and assignment.

When you type a statement on the command line, Python executes it and displays the result, if there is one. The result of a print statement is a value. Assignment statements don't produce a result.

A script usually contains a sequence of statements. If there is more than one statement, the results appear one at a time as the statements execute.

For example, the script

print 1  
x = 2  
print x

produces the output 1,2

Again, the assignment statement produces no output.

**Expression**: An expression is a combination of values, variables, and operators. If you type an expression on the command line, the interpreter evaluates it and displays the result:

>>> 1 + 1  
2

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:** ‘spamspamspam’

‘spamspamspam’

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

**Ans**: Because variable names cannot begin with a number.

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

**Ans**: int(), float(),str()

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

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

**Ans**: This expression causes and error because in this line 'I have eaten' and 'burritos' are strings, while 99 is treated as integer. In order to fix the error and print 'I have eaten 99 burritos.', 99 needs '' around it to treat it as a string.