**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.**

\* is expression

'hello' is value

-87.8 is value

- is expression

/ is expression

* is expression

6 is value

**2. What is the difference between string and variable?**

Variable stores value inside it. It may be of string or integer. It may be used for calculation. Its value might be changed in program while executing.

String is type of information which might be stored in variable. It is iterable. It cannot be used for calculation.

For example, in simple program line (x='Harshil'), here x is variable and 'Harshil' is string. variable can store both string and integer

**3. Describe three different data types.**

In python following are different type of data

**Numeric:** it may be sub divided into integer, float, complex number. Integer is whole number like 1, 3, -2, etc. float is having decimal points like 5.31, 2.43, -8.54, etc. and complex number is having imaginary part like 5+3j, 7+9j, etc.

**Sequence type:** String, list & tuple are sequence type data. It is ordered collection of data. These type of data is iterable. String can have letter, digits, symbols, etc. List is written inside [] brackets. It can have string, integer, float, tuple inside it. Tuple is data type in which value cannot be changed, so it is immutable. Example: String=’Harshil’, List=[1,2,’Har',5+3j], Tuple=(1,’Harshil’,5+8j)

**Dictionary:** It is unordered collection of data. Unlike other data type in this type everything is stored in key value pair. Both are separated by colon (:). Example: Dict={‘GJ’:’Gujarat’,’DL’=’Delhi’}

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

Expression is a combination of values, variables, operators and also call to function. Like in constant expression is x=12+3, Arithmatic expression is x+y, Integral expressions is x=5 & y=6.4 then c = x+int(y). c=a/b is floating expression.

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

This is statement as this is assigning 10 to spam variable. Expression is sequence of operators and operand while statement is anything which is written in python. Statement includes expression also.

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

**bacon = 22**

**bacon + 1**

bacon contains 22

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

**'spam' + 'spamspam'**

**'spam' \* 3**

'spamspamspam'

'spamspamspam'

Hence both will give same output.

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

In python variable name must start with letter or underscore. After first digit, it can contain a-z, A-Z, 0-9, \_

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

If a=’5’ then for integer, int\_a=int(5), for float, float(a)

If a=5 then for string, string\_a=str(a)

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

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

Addition operator cannot be performed in different data type.