**Assignment 1**

**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:** integer or string → ‘hello’, -87.8, 6

Expression → \*, -, /, +

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

**Ans:**

**variables** are used to store any type of data/values, basically the name of the location in the primary memory of your computer.

**String** is a datatype in python which are surrounded by either single quotation marks, or double quotation marks. It is array of bytes representing characters

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

**Ans:**

**List:** It is like arrays. It is collection of data having same or different data types. Lists are used to store multiple items in a single variable. List items are ordered, changeable, and allow duplicate values.

Syntax: a = List [1,2,3,a,b,c,1.2, 2.3]

**Dictionary:** It is use to store data in keys and value pair. Dictionary items are ordered, changeable, and duplication is not allowed.

Syntex: Dict = {“first\_name”: “Ashutosh”

“last\_name”: “Kumbhare”

“age”: 22}

**Set:** It used to store multiple items in a single variable. Sets are unchangeable but we can add and remove data.

Syntex: a= (1,2,3,4,5,6)

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

**Ans:** An expression is a combination of operators and operands that togather produce new value. We have many different types of expression in python. Following are multiple expression

1. **Constant Expressions:** These are the expressions that have constant values only.

a= 1+1.3

1. **Arithmetic Expressions:** An arithmetic expression is a combination of numeric values & operators

* **→ Addition**
* **→ Substraction**

**\* → Multiplication**

**/ → Division**

**% → Reminder**

**\*\* → Exponentiation**

1. **Integral Expressions:** These are the kind of expressions that produce only integer results after all computations and type conversions.
2. **Floating Expressions:** These are the kind of expressions which produce floating point numbers as result after all computations and type conversions.
3. **Relational Expressions:** In these types of expressions, arithmetic expressions are written on both sides of relational operator (> , < , >= , <=).
4. **Logical Expressions:** These are kinds of expressions that result in either True or False.
5. **Bitwise Expressions:** These are the kind of expressions in which computations are performed at bit level.

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

**Ans:** An expression evaluates to a single value. A statement does not.

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

bacon = 22

bacon + 1

**Ans:** bacon = 23 will increment with +1

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

'spam' + 'spamspam'

'spam' \* 3

**Ans:** 'spam' + 'spamspam'

‘spamspamspam’

'spam' \* 3 → ‘spamspamspam’

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

**Ans:** 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() and str() functions

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

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

**Ans:**  It will give an error because integer can not be added with string, to fix this we need to convert 99(int) to string.

'I have eaten ' + ‘99’ + ' burritos.'

oR

'I have eaten ' + str(99) + ' burritos.'.