# PYTHON – WORKSHEET 5

## Q1 to Q10 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following operators can be used to concatenate two lists?
   1. \* B) &

C) + D) none of the above

1. Consider the below two statements and select the correct option accordingly
2. List is an immutable data type like strings.
3. Lists are two dimenionsal data-structures.
   1. i-True, ii-False B) i-True, ii-True

C) i-False, ii-False D) i-False, ii-True

1. What will be the output of the following list comprehension? L=[x.upper() for x in [“abc”,” rahul”,” nitin”]]
   1. [“aBc”,” Rahul”,” nitIN”] B) [“ABC”,” RAHUL”,” NITIN”]

C) [“ABc”,” RAHul”,” NItin”] D) None of the above

1. What will be the output of the following list comprehension? L = [x for x in [1,2,3,4,5,6] if x%2==0]

A) [2,3,4] B) [1,3,4]

C) [4,5,6] D) [2,4,6]

1. What will be the output of the following line of code? A = [2,3,45,6,8,9]

B = A[1:4]

C = [ x for x in B if x%2==0]

A) [3,45,6] B) [45]

C) [6] D) [45,6]

1. What will be the output of following lines of code? a = {1,4,6,8}

b = {2,4,6,8}

c = {1,3,5,7}

print(a.intersection(a.difference(b)))

A) {2,3} B) {3,5}

C) {1,7} D) None of the above

1. What will be the output of the following lines of code? A = {1,22,22,3}

print(a)

A) {1,22,22,3} B) error

C) {1,3,22} D) None of the above

1. By which of the following ways you can access the set {1,2,3} in the following line of code? a=["asd",["d",{1,2,3},3],23]

A) a[0][2] B) a[1][0]

C) a[1][1] D) None of the above

1. Which of the following is not a method of sets in python?
   1. difference() B) intersection()

C) symmetric\_difference() D) None of the above

1. Which of the following is true with respect to sets in python? (**More Than One options may be correct. Mark all the correct options)**
   1. sets are one-dimensional data structures
   2. no two elements of a set can be same
   3. sets are immutable
   4. All of the above.

## Q11 is subjective answer type question, answer it briefly.

1. List any two major differences between lists and sets in python.
2. Sets can't contain duplicates
3. Sets are unordered
4. In order to find an element in a set, a hash lookup is used (which is why sets are unordered). This makes \_\_contains\_\_ (in operator) a lot more efficient for sets than lists.
5. Sets can only contain hashable items (see #3). If you try: set(([1],[2])) you'll get a TypeError.

In practical applications, lists are very nice to sort and have order while sets are nice to use when you don't want duplicates and don't care about order.

Also note that if you don't care about order, etc, you can use

new\_set = myset.intersection(mylist)

to get the intersection between a set and a list.

Set

A set is a collection which is unordered and unindexed, and doesnt allow duplicates. In Python, sets are written with curly brackets.

# example set

newset = {"one", "two", "three"}

* You cannot access items in a set by referring to an index
* Sets are mutable
* They are useful for checking for duplicates

List

A list is a collection which is ordered and changeable. In Python lists are written with square brackets.

# example list

newlist =["one", "two", "three"]

* You access the list items by referring to the index number
* Lists are mutable.

## Q12 to Q15 are programming questions. Answer them in Jupyter Notebook.

1. write a python program to square the elements of a list by using list comprehension.

numbers = [1, 2, 3, 4, 5]

squared\_numbers = [number \*\* 2 for number in numbers]

print(squared\_numbers)

1. Write a pyhton program to drop duplicate elements from a list of numbers.

duplicate = [2, 4, 10, 20, 5, 2, 20, 4]

print(list(set(duplicate))

1. Take two sets of numbers and try implementing the set operations - intersection, union, difference and symmetric\_difference between them.

A = {1, 2, 3, 4, 5}

B = {4, 5, 6, 7, 8}

A.union(B)

A.intersection(B)

A.difference(B)

A.symmetric\_difference(B)

1. Write a python program to add the elements of a set.

# set of letters

FLIP = {'F', 'L', 'I'}

# adding 'P'

FLIP.add('P')

print('Letters are:', FLIP)

