**Assignment 3**

1. Create a list of the 10 elements of four different types of Data Type like int, string, complex and float.

**a=[1,2,3.4,4.5,5,6,"ankit",8.9,9,3+7j]**

**print(a)**

2. Create a list of size 5 and execute the slicing structure

**>>> a=[1,2,3,4,5]**

**>>> a**

**[1, 2, 3, 4, 5]**

**>>> a[:]**

**[1, 2, 3, 4, 5]**

**a**

**[1, 2, 3, 4, 5]**

**>>> a[2:4]**

**[3, 4]**

**>>> a[:4]**

**[1, 2, 3, 4]**

**>>> a[4:]**

**[5]**

**>>> a[1:4:1]**

**[2, 3, 4]**

3. Write a program to get the sum and multiply of all the items in a given list.

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

sum(a)

print(sum(a))

**import numpy**

**a=[1,2,3,4,5]**

**b=[2,3,4,5,6]**

**out=numpy.prod(b)**

**res=numpy.prod(a)**

**print(res)**

**print(out)**

4. Find the largest and smallest number from a given list.

l=[1,4,5,6,67,7,4]

l.sort()

print(l)

l.sort(reverse=True)

print(l)

5. Create a new list that contains the specified numbers after removing the even numbers from a predefined list.

even=[]

a=[2,3,4,5,6,7,8,9]

for i in a:

if i%2!=0:

even.append(i)

print(even)

6. Create a list of first and last 5 elements where the values are square of numbers between 1 and 30 (both included).

l=[]

for i in range(1,30):

i=i\*\*2

l.append(i)

print(l)

k=l[0:5]

print("first 5 elements ",k)

m=l[::-5]

print("last 5 elements ",m)

7. Write a program to replace the last element in a list with another list.

Sample data: [[1,3,5,7,9,10],[2,4,6,8]]

Expected output: [1,3,5,7,9,2,4,6,8]

**l=[1,2,34,7,8,6]**

**m=[4,5,6,7,3]**

**k=l[:-1]+m**

**print(k)**

8. Create a new dictionary by concatenating the following two dictionaries:

a={1:10,2:20}

b={3:30,4:40}

Expected Result: {1:10,2:20,3:30,4:40}

**a={1:10,2:20}**

**b={3:30,4:40}**

**a.update(b)**

**print(a)**

9. Create a dictionary that contains a number (between 1 and n) in the form(x,x\*x).

Sample data (n=5)

**d=dict()**

**for i in range(1,6):**

**d[i]=i\*\*2**

**print(d)**

10. Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number. Suppose the following input is supplied to the program:

34,67,55,33,12,98

The output should be:

[‘34’,’67’,’55’,’33’,’12’,’98’]

(‘34’,’67’,’55’,’33’,’12’,’98’)

**var=input("enter the number ")**

**var=var.split(',')**

**ls=list(var)**

**tp=tuple(var)**

**print(ls)**

**print(tp)**