**ASSINGMENT-3**

**Questions 1:**create a numpy array starting from 2 till 50 with a stepsize of 3.

**Ans:**  >>> import numpy as np

>>> np.arange(start=2, stop=50, step=3)

array([2, 5, 8,11,14,17,20,23,26,29,32,35,38,41,44,47,50])

**Questions 2:**Accepttwo lists of 5 elements each from the user. convert them to numpy arrays. Concarenate these arrays and print it. Also sort these arrays and print it.

**Ans**: import numpy as np

my\_list = [1, 2, 3, 4, 5, 6, 7, 8]

print("List to array: ")

print(np.asarray(my\_list))

**Questions 3:** write a code snippet to find the dimensions of a ndarray and its size

**Ans**: # Python program to demonstrate

# basic array characteristics

import numpy as np

# Creating array object

arr = np.array( [[ 1, 2, 3],

[ 4, 2, 5]] )

# Printing type of arr object

print("Array is of type: ", type(arr))

# Printing array dimensions (axes)

print("No. of dimensions: ", arr.ndim)

# Printing shape of array

print("Shape of array: ", arr.shape)

# Printing size (total number of elements) of array

print("Size of array: ", arr.size)

# Printing type of elements in array

print("Array stores elements of type: ", arr.dtype)

**Questions** **4**:How to convert 1D array into 2D array? Demostrate with the help of a code snippet

Hint:np.newaxis,np.expand\_dims

**Ans:** a\_1d\_array = np.array([1, 2, 3, 4])

**print**(a\_1d\_array)

reshaped\_to\_2d = np.reshape(a\_1d\_array, (-1, 2))

**print**(reshaped\_to\_2d)

**Qustions:5 C**onsider two square numpy arrays.stack them vertically and horizontally.

Hint:use vstack(),hstack()

Ans: import numpy as np

a = np.array([[1, 2],

              [3, 4]])

b = np.array([[5, 6],

              [7, 8]])

# vertical stacking

print("Vertical stacking:\n", np.vstack((a, b)))

# horizontal stacking

print("\nHorizontal stacking:\n", np.hstack((a, b)))

c = [5, 6]

# stacking columns

print("\nColumn stacking:\n", np.column\_stack((a, c)))

# concatenation method

print("\nConcatenating to 2nd axis:\n", np.concatenate((a, b),1))

**Questions:6** Howto get unique items and counts of unique items?

**Ans**:

# taking an input list

input\_list = [1, 2, 2, 5, 8, 4, 4, 8]

# taking an input list

l1 = []

# taking an counter

count = 0

# travesing the array

for item in input\_list:

if item not in l1:

count += 1

l1.append(item)

# printing the output

print("No of unique items are:", count)