



## INFORMATICS PRACTICES Chapter 10 : Working with NumPy

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: XI Sec: \_\_\_\_

1. Create an ndarray with values ranging from 25 to 50 each spaced with a difference of 5.
2. Create a 5 x 5 ndarray having values ranging from 0 to 25(both inclusive)
3. Write code to extract elements in reversed order from array Ar. The extracted elements should be spaced with 3 elements in between in original array.i.e., every 4<sup>th</sup> element  
Ar=array([ 0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196], dtype=int32)  
Show the resultant slice

4. An ndarray W contains the following data  
[[ 0 2 4 6 8]  
 [10 12 14 16 18]  
 [20 22 24 26 28]  
 [30 32 34 36 38]]

What will be returned by the statements ?

- |                         |                            |
|-------------------------|----------------------------|
| a) print(y[0:3,0:3])    | e) print(y[0:2,0:3])       |
| b) print(y[2:4,0:2])    | f) print(y[1:3,1:1])       |
| c) print(y[3:0,3:0])    | g) print(y[3:0:-1,3:0:-1]) |
| d) print(y[:,:-1,::-1]) | h) print(y[:,3,::2])       |
5. Consider an array as shown below :

```
Array([[ 0  1  2  3  4  5  6  7  8]  
       [ 9 10 11 12 13 14 15 16 17]  
       [18 19 20 21 22 23 24 25 26]])
```

What will be the output produced by the following array split

- a) np.vsplit(p,3)
  - b) np.split(p,(1,2),axis=1)
  - c) np.split(p,(1,2),axis=0)
6. Predict the output of the following code fragments
    - a) ip=np.array([[21,22,23],  
 [24,25,26]])  
ip2=np.concatenate([ip,ip],axis=1)  
print(ip2)
    - b) ip1=np.array([21,22,23])  
ip2=np.array([[24,25,26],  
 [27,28,29]])  
ip3=np.vstack([ip1,ip2])  
print(ip3)
    - c) ip1=np.array([[18,19,20],  
 [21,22,23]])  
ip2=np.array([[24,25,26],  
 [27,28,29]])  
ip3=np.hstack([ip1,ip2])  
print(ip3)