|  |  |
| --- | --- |
| 1 | An ndarray X contains the following data:  [[0 1 2 3]  [4 5 6 7]  [8 9 10 11]  [12 13 14 15]]  What will be returned by the statements:  i) print(X[0:2,0:2]  ii) print(X[2:0,2:0]  iii) print(X[2:0:-1,2:0:-1]) |
| 2 | Given the following ndarray Ary1 [[1 2 3],  [4 5 6],  [7 8 9]]  Write array slices to print:  a) Hoizontal rows separately  b) Veritcal columns separately |
| 3 | Consider the two arrays: ar1=[[0 1 2],  [3 4 5],  [6 7 8]]  ar2=[[10 11 12]  [13 14 15]  [16 17 18]]  i) Write command to concatenate ar1 and ar2- i) rowwise and ii) columnwise  ii) What be the resultant array if the follwing statement is given?  np.hstack([ar1,ar2]) |
| 4 | Consider the following ndarrays:  A=[10,20,30,40,50,60,70,80,90]  B=[[0,1,2,3],  [4,5,6,7],  [8,9,10,11],  [12,13,14,15]]  What will be the array slices as per the following?  i) B[0:2,1:3]  ii) A[2:6:3]  iii) A[-1:-3]  iv) B[::-1]  v) B[:3,2:] |
| 5 | Write python statement to create a two- dimensional array of 4 rows and 3 columns. The array should be filled with ones. |
| 6 | Write python statement to create a one –dimensional array using arange() function .Elements will be in the range 10 to 30 with a step of 4 (including both 10 and 30). Reshape this one- dimensional array to two dimensional array of shape(2,3). Then display only those elements of this two –dimensional array which are divisible by 5. |
| 7 | Find the output:  import numpy as np  a1=np.array([10,11,12,13])  a2=np.array([[2,4,6],[1,3,5]])  print(type(a1))  print(a1.shape)  print(a2.shape)  print(a1.dtype)  print(a1.itemsize) |
| 8 | Find the output: (i)  import numpy as np  a=np.array([1,2,3,4])  print(a+2)  a[1:3]=-4  print(a) |
| 9 | Find the output:  import numpy as np  a=np.array([[0,2,4,6],[8,10,12,14],[16,18,20,22],[24,26,28,30]])  print(a)  print(a[:3,3:])  print(a[1::2,:3])  print(a[-3:-1,-4::2])  print(a[::-1,::-1]) |
| 10 | Find the output: import numpy as np l1=[10,11,12] l2=[[1,2,3],[4,5,6]] l3=[[6],[7]]  a1=np.vstack((l1,l2)) print(a1) print(a1.shape) a2=np.hstack((l2,l3)) print(a2) print(a2.shape) |
| 11 | Find the output:  import numpy as np a1=np.array([[1,2,3],[4,5,6],[7,8,9]])  a2=np.array([[11,12,13],[14,15,16]])  a3=np.concatenate((a1,a2),axis=0) print(a3) a3=np.concatenate((a1,a2),axis=None) print(a3) |
| 12 | What is the output of following code? import numpy as np  a = np.array([[1,2],[3,4]], dtype=np.int32)  b = np.array([[5,6],[7,8]], dtype=np.int32) print(np.add(a,b))  print(a+b) |
| 13 | Write a program to create the 4 X 4 NumPy array with random element between the ranges of 15 to 85. Extract the elements from the array containing elements whose square is fully divisible by 4. |
| 14 | Fill in the blank with appropriate values to create a 3 X 3 numpy array having numbers between 10 and 50.  import numpy as np  a = np.arange( , ).reshape((3,3)) |
| 15 | Write a python program to   1. Create two 3 X 3 numpy array having random numbers from 0 to 10. 2. Stack them in such a way that resultant array will have 6 row and columns. 3. Display the number of elements in the final array. |