



FACULTY HIGHER SECONDARY SCHOOL
SAMPLE QUESTION PAPER 2019-20
SUB: INFORMATICS PRACTICES
CLASS: XII COMMERCE

Full marks: 50

Q1: Are NumPy arrays and Python lists same ? Also give an example of the mentioned syntax. [3]

Q2: Mention bytes of memory occupied by below Numpy datatypes: [2]

- a) int8 b) int64 c) Unicode d) float16

Q3: What is the use of fromiter() in Numpy arrays? Give one example for the same. [2 + 1 = 3]

Q4: Predict the output(s) considering that NumPy is imported as np: [2 * 6 = 12]

a) `arr1 = np . ones ([2 , 3] , dtype = np.float32)`

b) `arr2 = np . arrange (8 , 0) . reshape (2 , 4)`
`print (arr2)`

c) `arr3 = np . arrange (15)`
`arr3 [4] = 34`
`arr3 [13] = 67`
`print (arr3)`

d) `l1 = [1 , 2 , 3 , 4 , 5]`
`a1 = np . array (l1)`
`print (a1.dtype)`
`print (a1.shape)`
`print (a1.itemsize)`

e) `n1 = np . array ([2 , 4 , 6 , 8 , 10 , 12 , 14 , 16]`
`print (n1 [:-3])`
`print [4 :]`
`print [3 : 7]`
`print [2 : 7 : 2]`

f) `n = [1 , 2 , 3 , 99 , 3 , 2 , 1]`
`x1 , x2 , x3 = np . split (x , [3 , 5])`
`print (x1 , x2 x3)`

Q5: a) Explain the below given codes. [2]

`n1 = np . linspace (2 , 3 , 6)`

b) Identify the type of shapes of the following ndarrays: Also write Python codes to create them.

[2 * 3 = 6]

i)

2	4	89	6
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ii)

2
3
5

iii)

1	33	87	5
7	4	36	23

Q6: a) Differentiate between these two functions: zeros () and ones () in terms of NumPy arrays. Give one example for each. [2 + 2 = 4]

b) What are hstack () and vstack () of Numpy arrays? [2]

c) Differentiate between the below given two NumPy codes: [2]

`np.hsplit (arr1 , 2)`

`np.vsplit (arr1 , 2)`

d) arr1 = [2]

2	4	2
1	9	1

arr2 = [2]

1	2	8	9
6	3	4	5

`X1 = np . concatenate ((arr1 , arr2) , axis = 1)`

`print (X1)`

e) Write Python codes to create 3 * 3 matrix with values ranging from 2 to 12. [2]

f) Explain the following terms: [3]

a) Covariance b) Correlation c) Linear Regression

g) Differentiate between a series and dataframe of Pandas. [3]

h) Consider the following code to create two dataframes with similar values. What will be printed by the code given below? Also justify your answer. [4]

`DF1 = pd . DataFrame ([1 , 2 , 3])`

`DF2 = pd . DataFrame ([[1 , 2 , 3]])`

`print (" DF1 ")`

`print (DF1)`

`print (" DF2 ")`

`print (DF1)`
