1.) Explain three-dimensional data indexing.

A)>>>NumPy arrays are high-performance data

Structures, better suited for mathematical

Operations than Python's native list data type. A

Three-dimensional (3D) array is composed of 3

Nested levels of arrays, one for each dimension.

>>> We USE numpy.array() TO CREATE A 3D NUMPY

ARRAY WITH SPECIFIC VALUES

>>>Call numpy.array(object) with object as a list

Containing x nested lists, y nested lists inside each

Of the x nested lists, and z values inside each of the

Y nested lists to create a x-by-y-by-z 3D NumPy

Array.

>>> a_3d_array = np.array ([[[1, 2], [3, 4]], [[5, 6], [7, 8]]])

Print(a_3d_array)

OUTPUT:- [[[1 2] [3 4]] [[5 6] [7 8]]]

2.) What's the difference between a series and a Dataframe?

A)>>> Series can only contain single list with index,

Whereas dataframe can be made of more

Than one series or we can say that a

Dataframe is a collection of series that can

Be used to analyse the data

3.) What role does pandas play in data cleaning?

A)>>>Data cleaning with Pandas It is an essential

skill of Data Scientists to be able to work

with messy data, missing values,

inconsistent, noise, or nonsensical data. To

work smoothly python provides a built-in

module Pandas.

4.) How do you use pandas to make a data frame
out of n-dimensional arrays?

A)>>>import pandas as pd # Create the dataframe

df = pd.DataFrame(numpy_array) df =

pd.DataFrame(numpy_array,

columns=['digits', 'words']) ... df =

pd.DataFrame(numpy_array, index=['day1',

'day2', 'day3', 'day4'], columns=['digits',

'words'])

5.) Explain the notion of pandas plotting.

A)>>>Matplotlib is a Python plotting package that

makes it simple to create two-dimensional

plots from data stored in a variety of data

structures including lists, numpy arrays, and

pandas dataframes. Matplotlib uses an

object oriented approach to plotting

>>> Ex:- import pandas as p

import matplotlib.pyplot as plt

df = pd.read_csv('data.csv')

df.plot()

plt.show()