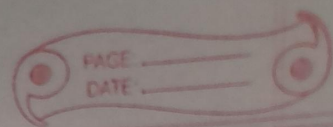


## Assignment - 01



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Batch - C

Subject - Data Science

Q-1. > What is Data Science and Explain with 5 applications of Data Science?

Ans

Data Science applications also enable and advance level of treatment personalization through research in genetics and genomics.

\* Applications of Data Science —

(i) In Search Engine

The most useful application of data science in search engines. As we know when we want to search for something on the internet.



(ii) In Transport: Data Science also intered into the transport vehicles like Driverless Cars.

(iii) In Finance: Data Science plays a key role in financial industries. Financial industries always have an issue of fraud and risk.

(iv) In Ecommerce: E-commerce websites like Amazon, Flipkart etc. use data science to make a better user experience with personalized recommendations.

(v) In Health Care:  
In the Healthcare industry data science act as a bone. Data Science is used for

- \* Detecting Tumor
- \* Drug Discoverise
- \* Medical Image Analysis.



Q.2) Explain in detail about numpy Library with 2 examples ?

Ans

Numpy is a python-library used for working with arrays.

It also has functions for working in domain of linear algebra, transformation and matrices.

Ex:- In python we have lists that serve the purpose of arrays but they are slow to process.

Numpy aim to provide an array object that is up to 50x faster than traditional python lists.

Q.3) List any 3 Data Science Python Libraries and explain them in detail ?

Ans

Python is most widely used programming language today. When it comes to data science tasks and challenges,



python never ceases to surprise us  
it were.

Most Data Scientist are already  
learning the power of python  
programming every day.

Q-4) Write down in detail about ndim,  
shape, size and item size?

Ans

\* Number of dimensions of the Numpy  
array - ndim.

\* Shape of the Numpy array - Shape

\* Size of the Numpy array - Size

\* Size of the first dimension of  
Numpy array (len())



Q-5) List out Scipy Subpackage?

Ans

\* ~~Clust~~ Clustering Package (Scipy.cluster)

\* Constants (Scipy.constants)

\* Legacy discrete Fourier transforms (Scipy.fft)

\* Integration and ODEs (Scipy.integrate)

\* Interpolation (Scipy.interpolate)

\* Input and Output (Scipy.io)

Q-6) Write about the Scipy linear algebra with an example of a code?

Ans

The Scipy package includes the features of the ~~in~~ numpy package in python. It uses numpy arrays as the fundamental data structure.

It has all the features included in the linear algebra of the



Numpy module and some extended functionality.

Syntax - Scipy, linalg, solve (a, b, sym = pass, lower, overwrite-a, overwrite-b, debug, check-infinite, assume-a, transport)

Q-7) Why did mathematics uses for data Science?

Ans

Data Science requires mathematical study because machine learning algorithms, and performing analysis, and discovering insight from data requires math.

Which mathematical concepts are implemented in data science and machine learning.

Machine Learning is powered by four critical concepts.

————— 1 ————— 2 ————— 3 ————— 4 —————