3. Define problem category for below problem statement  
 “A chemist wants to find some interesting patterns in which patients are behaving upon administering the drug”

Ans: A chemist wants to find the patterns in which the patients are behaving on giving them the drug. We want to discover the patterns. we want to find the hidden structure in data. we want to learn inherent structure of our data without using explicitly-provided labels. This can be done using the unsupervised learning category. In unsupervised learning the data in unlabelled, this unlabelled data is transformed into groups of clusters, where each cluster will consist data for persons who are having same characteristics. Thus, we will have the pattern in which patients are behaving. Problem category is Unsupervised learning.

4. How will you select suitable machine learning algorithm for a problem statement

Ans:

1. Once we meet the client, we first understand their business. After understanding that what client wants, we design a problem statement.
2. Then we start categorizing the problem statement whether he wants us to forecast result, he wants us to help in a decision-making strategy, he wants us to distribute his assets in most profitable manner or he wants us to infer the hidden structure in the data.
3. we categorize the problem statement into 4:

a) Predictive/Forecasting: Whether we want to forecast something such as future stock price, tomorrow’s weather, etc.

b) Classification: example; we want to classify certain customers whether they will buy or not certain commodity.

c) Optimization: example; we want to optimize the revenue of the client such as where should he invest his money in.

d) Unsupervised learning: The most common tasks within unsupervised learning are clustering, representation learning, and density estimation. In all of these cases, we wish to learn the inherent structure of our data without using explicitly-provided labels.

1. Then according to the problem category, we select the best suitable machine learning algorithm.

5.Define one problem statement for Education industry?

Ans:

“A teacher wants to predict how many students will be selected by for higher education by top universities based on their marks scored in entire course, their behaviour, their communication skills, their research work, their extra-curricular activities”

This is a Predictive/Forecasting problem Statement in which chances of the number(quantitative) of students will be selected for higher education are predicted by the ML algorithm.