1.There are 3 stages of Machine Learning:-

*a) Model Building*

*b) Model testing*

*c) Applying the model.*

2. What is the standard approach to supervised learning?

*Answer: - The standard approach to supervised learning is to split the set of example into the training set and the test.*

3. What is ‘Training set’ and ‘Test set?

*Answer:- In various areas of information science like machine learning, a set of data is used to discover the potentially predictive relationship known as ‘Training Set’. Training set is an example given to the learner, while Test set is used to test the accuracy of the hypotheses generated by the learner, and it is the set of example held back from the learner. Training set is distinct from Test set.*

4. What is the general principle of an ensemble method and what is bagging and boosting in ensemble method?

*Answer:-The general principle of an ensemble method is to combine the predictions of several models built with a given learning algorithm in order to improve robustness over a single model.*

*Bagging in ensemble:- Bagging is a method in ensemble for improving unstable estimation or classification schemes. Bagging both can reduce errors by reducing the variance term.*

*Boosting method are used sequentially to reduce the bias of the combined model. Boosting can reduce errors by reducing the variance term.*

5. How can you avoid over fitting?

*Answer:-*

*a)Cross-Validation*

*b)Train with more data*

Training with more data can help algorithms detect the signal better.

*c)Remove Features*

Can manually improve their generalizability by removing irrelevant input features.

*d)Early stopping*

Up until a certain number of iterations, new iterations improve the model. After that point, however, the model’s ability to generalize can weaken as it begins to overfit the training data.

Early stopping refers stopping the training process before the learner passes that point.

*e) Regularization*

Regularization refers to a broad range of techniques for artificially forcing your model to be simpler.

*f) Ensembling*

Use ensembling methods that “average” models