1)What is Random Forest Regressor?

Ans- A random forest regressor. A random forest is a meta estimator that fits a number of classifying decision trees on various sub-samples of the dataset and uses averaging to improve the predictive accuracy and control over-fitting.

2) How does Random Forest Regressor reduce the risk of overfitting?

Ans- Random forests deals with the problem of overfitting by creating multiple trees, with each tree trained slightly differently so it overfits differently. Random forests is a classifier that combines a large number of decision trees. The decisions of each tree are then combined to make the final classification.

3) How does Random Forest Regressor aggregate the predictions of multiple decision trees?

Ans- The Random Forest Algorithm combines the output of multiple (randomly created) Decision Trees to generate the final output. This process of combining the output of multiple individual models (also known as weak learners) is called Ensemble Learning.

4) What are the hyperparameters of Random Forest Regressor?

Ans- In random forest, the hyperparameters are the number of trees, number of features and the type of trees (such as GBM or M5). The number of features is important and should be tuned. In this case, random forest is useful because it automatically tunes the number of features.

5) What is the difference between Random Forest Regressor and Decision Tree Regressor?

Ans- A decision tree combines some decisions, whereas a random forest combines several decision trees. Thus, it is a long process, yet slow. Whereas, a decision tree is fast and operates easily on large data sets, especially the linear one. The random forest model needs rigorous training.

6) What are the advantages and disadvantages of Random Forest Regressor?

Ans- Advantages of random forest

It can perform both regression and classification tasks.

A random forest produces good predictions that can be understood easily.

It can handle large datasets efficiently.

The random forest algorithm provides a higher level of accuracy in predicting outcomes over the decision tree algorithm.

The main limitation of random forest is that a large number of trees can make the algorithm too slow and ineffective for real-time predictions. In general, these algorithms are fast to train, but quite slow to create predictions once they are trained.

7) What is the output of Random Forest Regressor?

Ans- Random forest operates by constructing a multitude of decision trees at training time and outputting the class that's the mode of the classes (classification) or mean prediction (regression) of the individual trees

8) Can Random Forest Regressor be used for classification tasks?

Ans- Random Forest is a sophisticated and adaptable supervised machine learning technique that creates and combines a large number of decision trees to create a "forest". This can be used to solve classification and regression problems.