

1. A
2. A
3. B
4. C
5. A
6. C
7. B
8. B
9. 0.66,
10. The random forest has complex visualization and accurate predictions, but the decision tree has simple visualization and less accurate predictions. The advantages of Random Forest are that it prevents overfitting and is more accurate in predictions.
11. Scaling is required to rescale the data and it's used when we want features to be compared on the same scale for our algorithm. And, when all features are in the same scale, it also helps algorithms to understand the relative relationship better.
Types of scaling –
Nominal Scale.
Ordinal Scale.
Interval Scale.
Ratio Scale.
13. Accuracy is not a good metric for imbalanced datasets. This model would receive a very good accuracy score as it predicted correctly for the majority of observations, but this hides the true performance of the model which is objectively not good as it only predicts for one class.
14. The F-score (also known as the F1 score or F-measure) is a metric used to evaluate the performance of a Machine Learning model. It combines precision and recall into a single score.
F-measure formula: $F\text{-score} = 2 \times (\text{precision} \times \text{recall}) / (\text{precision} + \text{recall})$
15. `fit ()` — This method goes through the training data, calculates the parameters (like mean (μ) and standard deviation (σ) in Standard Scaler class) and saves them as internal objects.
`transform()` — The parameters generated using the `fit()` method are now used and applied to the training data to update them.
`fit_Transform()` — This method may be more convenient and efficient for modelling and transforming the training data simultaneously.