Q1 to Q11 have only one correct answer. Choose the correct option to answer your question.

1.a)

2.d)

3.a)

4.a)

5.b)

6.b)

7.a)

8.d)

9.a)

10.d)

11.d)

Q12 to Q14 are subjective answers type questions, Answers them in their own words briefly

12. Is K sensitive to outliers?

ANS: The K-means clustering algorithm is sensitive to outliers because a mean is easily influenced by extreme values. The algorithm seeks to minimise the squared Euclidean distances between the observation and the cluster centroid to which it belongs. However, the K-Means algorithm does not always produce the best results. It is susceptible to outliers. An outlier is a data point that differs from the rest of the data points.

13. Why is K means better?

ANS: Convergence is guaranteed with K also means centroids' positions can be warmed up. Adapts easily to new examples. Generalizes to different shapes and sizes of clusters, such as elliptical clusters. K means that it is easy to implement and adapts to new examples. With that we can also handle large data sets.

14.Is K means a deterministic algorithm?

ANS: The basic k-means clustering is based on a non-deterministic algorithm. This means that running the algorithm several times on the same data, could give different results. We can propose an improved, density-based version of K-Means that includes a novel and systematic method for choosing initial centroids