MACHINE LEARNING

1. Movie Recommendation systems are an example of:

i) Classification

ii) Clustering

iii) Regression

Ans : **b) 1 and 2**

2. Sentiment Analysis is an example of:

i) Regression

ii) Classification

iii) Clustering

iv) Reinforcement

Ans : **a) 1 Only**

3. Can decision trees be used for performing clustering?

Ans : True

4. Which of the following is the most appropriate strategy for data cleaning before performing clustering analysis, given less than desirable number of data points:

i) Capping and flooring of variables

ii) Removal of outliers

Ans : **1 only**

5. What is the minimum no. of variables/ features required to perform clustering?

Ans : **b) 1**

6. For two runs of K-Mean clustering is it expected to get same clustering results?

Ans : **b) No**

7. Is it possible that Assignment of observations to clusters does not change between successive iterations in K-Means?

Ans : a) Yes

8. Which of the following can act as possible termination conditions in K-Means?

i) For a fixed number of iterations.

ii) Assignment of observations to clusters does not change between iterations. Except for cases witha bad local minimum.

iii) Centroids do not change between successive iterations.

iv) Terminate when RSS falls below a threshold.

Ans : d) All of the above

9. Which of the following algorithms is most sensitive to outliers?

Ans : **a) K-means clustering algorithm**

10. How can Clustering (Unsupervised Learning) be used to improve the accuracy of Linear Regression model (Supervised Learning):

i) Creating different models for different cluster groups.

ii) Creating an input feature for cluster ids as an ordinal variable.

iii) Creating an input feature for cluster centroids as a continuous variable.

iv) Creating an input feature for cluster size as a continuous variable.

Ans : **d) All of the above**

11. What could be the possible reason(s) for producing two different dendrograms using agglomerative clustering algorithms for the same dataset?

a) Proximity function used

b) of data points used

c) of variables used

d) All of the above

Ans : **d) All of the above**

12. Is K sensitive to outliers?

Ans : The k-means algorithm updates the cluster centers by taking the average of all the data points that are closer to each cluster center. When all the points are packed together, the average makes

sense. However, when you have outliers, this can affect the average calculation of the whole cluster. As a result, this will make the cluster center closer to the outlier.

13. Why is K means better?

Ans : K means is considered to be best clustering because of its advantages like Relatively simple to implement, Scales to large data sets, Guarantees convergence, Can warm-start the positions of centroids, Easily adapts to new examples, Generalizes to clusters of different shapes and sizes, such as elliptical clusters.

14. Is K means a deterministic algorithm?

Ans : K-means clustering is example of non-deterministic algorithm