MODULE IV

1. What is Hierarchical clustering? Explain two different types of hierarchical clustering?
2. Explain different linkage methods.
3. Consider the following data points in a two–dimensional space:
   A(1,2), B(2,3), C(6,7), D(7,8) Using agglomerative hierarchical clustering, cluster these points

4.Consider the transaction dataset of a store where each transaction contains the list of items purchased by the customers. Find a frequent set of items that are purchased by the customers and generate the association rules for them.

MINIMUM SUPPORT COUNT IS 2 and CONFIDENCE IS 50%

Transaction id	Items purchased
T1	I1,I2,I3
T2	I2,I5
T3	I4,I5
T4	I1,I2,I5
T5	I2,I3,I5

5.Consider the following dataset and find frequent Item-Sets and generate association rules

MINIMUM SUPPORT COUNT IS 50% and CONFIDENCE IS 70%

Transaction id	Items purchased
T1	bread,butter,milk
T2	bread,butter
T3	bread,milk
T4	butter,milk
T5	bread,milk

6.Differentiate between association and clustering of unsupervised machine learning

7.define clustering and explain the types of clustering methods.

8.Explain k means clustering algorithm

9.Use the K means clustering to cluster the following data points into two groups with initial cluster centroids are M1=4,M2=11

Data points:{2,4,10,12,3,20,30,11,25}

10.Explain agglomerative hierarchical clustering.

11.Consider the following data points in a one dimensional space:{18,22,25,42,27,43}

Use agglomerative hierarchical clustering,to cluster these points

12.define dentogram

13.Define PCA

14.Expalin Principal Component analysis Algorithm

15.Reduce the give 2 dimension data into 1 dimension using PCA algorithm

X	2	0	1
Y	0	1	2