

3 Hours)**[Total Marks 80]**

- i. Q. 1. is Compulsory.**
- ii. Attempt any three from the remaining.**
- iii. Assume suitable data.**

- Q. 1**
- (a)** Explain Regression based classifier (5)
 - (b)** What is Data Preprocessing? Explain the different methods for the Data Cleansing phase (5)
 - (c)** What is hierarchical clustering? Explain any two techniques for finding distance between the clusters in hierarchical clustering. (5)
 - (d)** Define “Data mining”, Enumerate five example applications that can benefit by using Data Mining (5)
- Q. 2**
- (a)** Explain clearly working of DBSCAN using appropriate diagrams (10)
 - (b)** Explain Data mining as a step in KDD. Give the architecture of typical Data Mining system (10)
- Q. 3**
- (a)** Explain BIRCH algorithm with example (10)
 - (b)** Explain different visualization techniques that can be used in data mining (10)
- Q. 4**
- (a)** Explain Multilevel association rules with suitable examples (10)
 - (b)** Define classification, issues of classification and explain ID3 classification with example (10)
- Q. 5**
- (a)** Explain Bagging and Boosting of classifiers (10)
 - (b)** Explain Box plot summary with example (10)
- Q. 6**
- (a)** Explain Business Intelligence Issues (10)
 - (b)** What is clustering? Explain k-means clustering algorithm. Suppose the data for clustering – {2, 4, 10, 12, 3, 20, 11, 25} Consider k=2, cluster the given data using above algorithm. (10)