

(3 Hours)

Total Marks: 80

N.B. : 1) Question No.1 is **compulsory**.2) Attempt any **THREE** from the remaining questions.

3) Figures to the right indicate full marks.

- Q1. (a) Explain KNN algorithm. [5]
 (b) Explain Dimensionality reduction techniques [5]
 (c) Differentiate between Data Warehouse and DataMart [5]
 (d) Explain Hierarchical clustering. [5]
- Q2. (a) Define Parallel Database. Explain different types of parallel database architectures in detail [10]
 (b) What is OLAP? Explain different types of OLAP operations. [10]
- Q3. (a) What is Data Warehouse? Explain Data warehouse architectural components in details [10]
 (b) Differentiate the following [10]
 a) ROLAP vs MOLAP
 b) Agglomerative and Divisive clustering
- Q4. (a) What is Web mining? Explain different types of web mining techniques in detail [10]
 (b) Explain Knowledge Discovery Process (KDD) in detail. What is the role of data mining in KDD process? [10]
- Q5. (a) Define Classification. Explain Naïve Bayes classification along with example. [10]
 (b) Explain the following [10]
 a) OID's
 b) Abstract datatypes
- Q6. (a) Why clustering is an unsupervised learning? Explain K-Means Clustering algorithm with suitable example. [10]
 (b) Define Market Basket Analysis. Explain Apriori Algorithm. [10]
 Find out frequent itemsets and strong association rule from the given transaction using Apriori Algorithm with Min_Support of 50% and Min_Confidence of 70%.

TID	Items
T1	Pen, Book, Pencil
T2	Eraser, Book , Crayon
T3	Pen , Eraser , Book, Crayon
T4	Eraser, Crayon
