TM253957B

31/10/25

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, OCTOBER 2025

2024 ADMISSIONS REGULAR

SEMESTER III - CORE COURSE

ST3C15TM - Data Mining and Their Applications

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Explain Data Archaeology.
2. Give some of the research challenges of data mining.
3. Explain KDD.
4. Discuss PCA.
5. Normalize the given data using Min-Max Method

   Salary
   10000
   25000
   12000
   15000
   5000
6. Expand AGNES and DIANA.
7. Discuss clustering.
8. Cluster the following data using single linkage and complete linkage. Represent it using dendrogram.
   7,10,13,20,25,30
9. Explain eigen values.
10. State any two properties of ridge estimator.

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Explain the purpose of data warehouse in mining process.
12. Explain major issues in Data mining.
13. Define Support and Confidence in association rule mining.
14. Discuss backward selection with example.
15. Construct a dendrogram by complete linkage clustering method using Agglomerative clustering for the following:

    dataset = {a, b, c, d, e}:
    distance matrix:

	a	b	c	d	e
a	0	9	3	6	11
b	9	0	7	5	10
c	3	7	0	9	2
d	6	5	9	0	8
e	11	10	2	8	0

16. Differentiate Manhattan and Euclidian distance measures.
17. List the steps to find the principal components in PCA.
18. Discuss Linear Regression Model.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Explain the implementation of data warehouse.
20. Describe different methods of Data cleaning.
21. Outline the various techniques of hierarchical clustering.
22. Explain collinearity and tools for detecting collinearity in detail.