21IS643

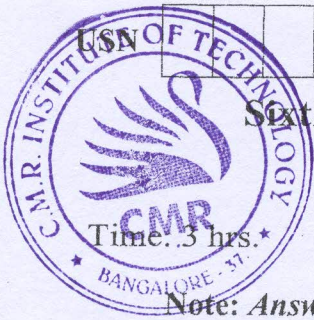## Sixth Semester B.E. Degree Examination, June/July 2024
Data Mining and Data Warehousing

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Differentiate Operational Database system and Data ware house.   (08 Marks)
    b. List Data Warehouse characteristics.   (04 Marks)
    c. With a neat diagram, explain a Three - Tier Architecture of Data Warehouse.   (08 Marks)

OR

2   a. Explain the schemas of Multidimensional Data models.   (08 Marks)
    b. Explain OLAP Operations   (06 Marks)
    c. Differentiate OLAP and OLTP.   (06 Marks)

Module-2

3   a. What is Data Mining? Explain KDD process in Data Mining.   (10 Marks)
    b. What kinds of pattern can be mined? Explain in brief.   (10 Marks)

OR

4   a. Explain the Data Preprocessing techniques in brief.   (10 Marks)
    b. Explain the Dimensionality Reduction with its significance.   (10 Marks)

Module-3

5   a. Explain the Apriori Algorithm with an example.   (10 Marks)
    b. Explain the Frequent Pattern growth algorithm and mention its advantages.   (10 Marks)

OR

6   a. Explain Alternative methods for generating frequency item sets in brief.   (10 Marks)
    b. Explain Evaluation of Association Pattern in brief.   (10 Marks)

Module-4

7   a. How does Decision tree induction algorithm works? Explain with an example.   (10 Marks)
    b. Describe the methods for comparing classifiers.   (10 Marks)

OR

8   a. Explain Direct methods and Indirect methods of Rule Extraction in brief.   (10 Marks)
    b. Explain Nearest Neighbour Classifier. List its characteristics.   (10 Marks)

Module-5

9   a. Describe K means Clustering algorithm. What are its limitations?   (10 Marks)
    b. Explain DBSCAN algorithm with an example.   (10 Marks)

OR

10 a. Explain the following in brief :
       i) Density Based Clustering   ii) Graph Based Clustering.   (10 Marks)
    b. Explain the BRICH Scalable Algorithm.   (10 Marks)

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