

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (AI&DS / DS) (Sem.-6)**  
**DATA MINING AND DATA WAREHOUSE**

Subject Code : BTCS 702-18

M.Code : 93953

Date of Examination : 05-12-2025

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) What does ROLAP stand for in the context of OLAP architecture?
- b) How does data pre-processing enhance the data mining process?
- c) What is the significance of the Gini index in classification tasks?
- d) Define association rule mining.
- e) Briefly explain the Naïve algorithm in the context of association rule mining.
- f) What distinguishes hierarchical clustering from other clustering methods?
- g) What is the significance of hierarchy in web structure?
- h) How does locality affect data retrieval on the web?
- i) What is data mining?
- j) Write the primary purpose of the Apriori algorithm in data mining.

## SECTION-B

2. Compare and contrast ROLAP, MOLAP and HOLAP in terms of their architecture and efficiency in processing OLAP queries, providing examples for clarity.
3. What are the common tasks involved in data mining and how do they differ from traditional data analysis? Use diagrams to illustrate different data mining tasks.
4. Discuss the functionality of search engines. Explain how they crawl, index, and retrieve information from the web.
5. Compare and contrast the Naïve Bayes method and decision tree classification. Highlight their strengths and weaknesses in predictive modeling and support your answer with diagrams illustrating their respective processes.
6. Explain the concept of locality in the web. Discuss how it influences user behavior and content accessibility and include a diagram to illustrate the impact of locality on web navigation and data retrieval.

## SECTION-C

7. Provide a comprehensive overview of web usage mining, detailing its processes and methodologies. Discuss how it analyzes user behavior, patterns and preferences through log file analysis and clickstream data.
8. Explain the Apriori algorithm for mining frequent itemsets. Include a brief description of its working mechanism, how it uses the concept of support and a diagram demonstrating the steps involved.
9. Discuss the process of data cube computation in detail. Explain how data cubes are created, the operations that can be performed on them and the significance of each operation. Illustrate the concepts of slicing, dicing and drilling down/up.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**