

**MASTER OF COMPUTER
APPLICATIONS**

(MCA) (REVISED)

Term-End Examination

December, 2024

**MCS-043 : ADVANCED DATABASE
MANAGEMENT SYSTEMS**

Time : 3 Hours

Maximum Marks : 100

Note : *Question No. 1 is compulsory. Answer any
three questions from the rest.*

1. (a) Explain Cursors and Alerts with the help of example code for each. Also give utility of both. 5
- (b) What is a view ? How is a view different from tables in Databases ? Explain any *two* strategies for implementing views. 5
- (c) What is a Hash join ? How is Hash join between two relations computed ? 5

- (d) How does data mining differ from the technique of Knowledge Discovery in Databases (KDD) ? Can we use these two techniques interchangeably ? Justify. 5
 - (e) Differentiate between Centralized DBMS and Distributed DBMS. 5
 - (f) What are deadlocks ? How are they detected ? Explain with the help of an example. 5
 - (g) Compare star schema and snowflake schema. 5
 - (h) What are Heterogeneous Distributed databases ? How do they differ from Homogeneous Distributed databases ? 5
2. (a) What is a Data Dictionary ? Give the features and benefits of data dictionary. Also, give disadvantages of a data dictionary. 8
- (b) What are Mobile databases ? Explain the characteristics of mobile databases. Also, give challenges of mobile databases. 7

- (c) Describe Multi-valued Dependency and Trivial Multi-valued Dependency. Also, state 4th normal form. 5
3. (a) What is Association Rule Mining ? Explain the working of Apriori algorithm for finding frequent itemsets with the help of an example. 10
- (b) What is XML ? How does XML differ from HTML ? Give advantages of XML. Also, create an XML schema for a list of students and their marks. (Make suitable assumptions, where ever necessary). 7
- (c) Create the DTD for verification of the student data created above in question 3(b). 3
4. (a) Draw a block diagram for information system life cycle. Briefly describe the key role of each phase. 7
- (b) Write the basic steps of query processing. How can the cost of query be measured ? 5

- (c) Compare Nested-loop join with Block Nested-loop join. 4
- (d) Briefly discuss the security features of Oracle. 4
- 5. Write short notes on the following : 5×4=20
 - (a) Dynamic SQL
 - (b) Behavioral diagrams in UML
 - (c) Reference architecture of DDBMS
 - (d) Multi-version time stamp ordering
 - (e) Data warehousing life cycle

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