

No. of Printed Pages : 4

MCS-043

M. C. A. (REVISED)
Term-End Examination
December, 2021

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

Time : 3 Hours

Maximum Marks : 100

Note : (i) *Question No. 1 is compulsory.*

(ii) *Answer any **three** questions from the rest.*

1. (a) Compare ER diagram with EER diagram. What is the utility of EER diagram ? How is EER diagram converted into a table ? 5
- (b) Compare inclusion dependencies and template dependencies. Give example of both. 5
- (c) Discuss the role of system catalogue in database administration. 5

- (d) Briefly discuss the Hash join. Give the method for calculating the cost of Hash join. 5
- (e) Why do we use lockbased protocol ? What are the pitfalls of lockbased protocol ? 5
- (f) How are remote back up recovery processes helpful in transaction processing methods ? 5
- (g) Compare XML to SGML and HTML. 5
- (h) What is a Datagrid ? What are the implications of using a datagrid ? 5
2. (a) What is the role of UML in Database design ? Compare structural diagrams with behavioural diagrams. 5
- (b) Differentiate between Embedded SQL and Dynamic SQL. 5
- (c) What is a catalogue ? Discuss the role of catalogue in distributed database system and object oriented database systems. 5
- (d) Compare indexed nested-loop join with block nested-loop join. 5

P. T. O.

[3]

MCS-043

3. (a) What is a Query evaluation plan ? Write the steps for the generation of Query evaluation plan for an expression. 5
- (b) What are multiversion schemes ? Discuss multiversion time stamp ordering. 5
- (c) Briefly discuss the term data buffering. 5
- (d) Elaborate the dual paging problem. 5
4. (a) What is database security ? Briefly discuss the levels of database security. 5
- (b) Compare centralized databases with distributed databases. Write the functions of distributed databases. 5
- (c) What is ETL process ? Discuss the transformations needed during the ETL process. 5
- (d) Discuss the major phases of Data Warehousing Life Cycle. 5

[4]

MCS-043

5. (a) What do you understand by the term classification ? Discuss the K-nearest neighbours algorithm for classification. 5
- (b) What is PostgreSQL ? Discuss the architecture of PostgreSQL. 5
- (c) Write short notes on any *two* of the following : 10
- (i) KDD
- (ii) Association rule mining
- (iii) JDBC

MCS-043

P. T. O.