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MCA 2nd Semester 2 Year Course
(w.e.f. 2020-21) Examination, May-2023
ADVANCE DATABASE SYSTEMS & DATA
WAREHOUSE
Paper-20MCA22C1

Time allowed : 3 hours]

[Maximum marks : 80

Note : Attempt five questions in all. Question No.1 is compulsory. In addition to compulsory question, attempt four more questions selecting one question from each unit.

1. Compulsory Question

- (a) How category is different from shared subclass?
- (b) What is linear recursion in ORDBMS?
- (c) Name the partitioning techniques used in I/O parallelism.
- (d) Name the factors that do not appear in centralized systems that affect concurrency control and recovery in distributed systems.
- (e) How the delete and update commands would be implemented on valid time and bitemporal relations?
- (f) What is DTD in XML?
- (g) Differentiate between virtual and enterprise warehouse.

- (2) 67057-N
- (h) Why data cubes are used in multidimensional models?

Unit-I

2. (a) Discuss various constraints applied on specialization and generalization. Also discuss how multiple inheritance can be achieved in case of specialization.
- (b) Differentiate between structured and unstructured complex objects. Also discuss reference semantics exist between a complex object and its components at each level.
3. (a) How query is processed and optimized in ORDBMS? Give an example also.
- (b) How effectiveness of information retrieval is measured? Discuss the metrics for measuring retrieval effectiveness.

Unit-II

4. (a) What is intraoperation parallelism? How parallelism can be increased with intraoperation parallelism?
- (b) What are various design issues related to DDBMS? Discuss their usage also.
5. (a) How server provides transaction services to client? Illustrate with diagrammatical notation.

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- (3) 67057-N
- (b) How concurrency control is achieved in distributed database?

Unit-III

6. (a) How time is incorporated using tuple versioning and attributes versioning in temporal database?
- (b) Discuss the architecture for mobile computing with diagram.
7. (a) How rules are interpreted in deductive database? Also discuss the datalog program and their safety.
- (b) What are different components and constraints associated with GIS?

Unit-IV

8. (a) What is data warehouse? Discuss different schema of data warehouse. From these schemas, which one is better and how?
- (b) How efficient computation of data cubes is specified in multidimensional model?
9. (a) Explain the ETL process with diagrammatic notation.
- (b) What is OLAP? Discuss various OLAP operations with example.

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