

Unit-III

6. (a) What is intraoperation parallelism ? How parallelism can be increased with intraoperation parallelism ?  
(b) What are various design issues related to DDHMS ? Discuss their usage also.
7. (a) How server provides transaction services to client ? Illustrate with diagrammatical notation.  
(b) How concurrency control is achieved in distributed database ?

Unit-IV

8. (a) What is active database ? Discuss the design and implementation issues related to active database.  
(b) What is cloud storage ? Discuss cloud storage architecture with diagram.
9. (a) Define GIS. Discuss the characteristics, constraints and data model for GIS.  
(b) Differentiate functional and procedural models of big data with their merits and usage.

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Roll No. : .....

Total No. of Questions : 9 | Total No. of Pages : 4

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MCA (Regular) 3rd Semester  
Examination, February-2022  
(Current CBCS Scheme w.e.f. Dec-2017-18)  
Paper-17MCA33C

ADVANCE DATABASE SYSTEMS

Time : Three Hours ] [Maximum Marks : 80

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note :- Attempt five questions in all, selecting one question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.*

**Compulsory Question**

1. (a) What is user defined constraint in EER model ? Discuss with example.  
(b) What primary characteristics should an Object Identifier possess ?

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- (c) How are multisets represented in ORDBMS ?
- (d) What is a data cube ? How is it used in data warehousing ?
- (e) What is I/O parallelism ? Name the partitioning techniques used for it.
- (f) Name the factors that do not appear in centralized systems that affect concurrency control and recovery in distributed systems.
- (g) How the delete and update commands would be implemented on valid time and bitemporal relations ?
- (h) What is Big data ? Discuss it in terms of volume and velocity.

**Unit-I**

- 2. (a) How specialization is different from generalization ? Also discuss how regular and multiple inheritance can be achieved in case of specialization.

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- (b) Differentiate between structured and unstructured complex objects. Discuss reference semantics exist between a complex object and its components at each level.
- 3. (a) What is persistent object ? How is persistency handled in OODBMS ?
- (b) How does a category differ from regular shared subclass ? What is a category used for ? Illustrate the answer with example.

**Unit-II**

- 4. (a) How constructor, typed view, recursion and inheritance are specified in ORDBMS ?
- (b) How is effectiveness of information retrieval measured ? Discuss the metrics for measuring retrieval effectiveness.
- 5. (a) How is query processed and optimized in ORDBMS ? Give an example also.
- (b) What are different schema architectures for multidimensional data models ? Discuss with diagrammatic notation.

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