Unit–III

6. (a) Differentiate interoperation and intra-operation parallelism. How interoperation parallelism increases performance of parallel system ?

   (b) What is Fragmentation ? Discuss various correctness strategies for fragmentation. How can a relation be put back together from various partitioning ?

7. (a) How server provides transaction services to client ? Illustrate with diagrammatical notation.

   (b) Discuss reference and component architecture for distributed database. How the degree of local autonomy is defined in these architectures ?

Unit–IV

8. (a) Discuss the design and implementation issues for active database.

   (b) What is the role of ETL process in Big data analytics ? Differentiate functional and procedural models of big data.

9. (a) Differentiate various types of cloud computing service models with their usage.

   (b) How do spatial databases differ from regular databases ? Discuss the different categories of spatial queries.

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M.C.A. (Regular) 3rd Semester Current (CBCS Scheme) Examination, March–2021
(w.e.f. Dec. 2017-18)

ADVANCE DATABASE SYSTEMS
Paper–17MCA33C3

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. Question No. **1** is compulsory. Attempt *four* more questions by selecting *one* question from each Unit. All questions carry equal marks.

(Compulsory Question)

1. (a) How the concept of multiple inheritance is used in EER model ?

   (b) How encapsulation is used to create abstract data types in OODB ?

(c) What is the purpose of FINAL and NOT FINAL keywords in ORDBMS ?

(d) Differentiate false positive and false negative in case of information retrieval.

(e) How cache-coherency problem is reduced in interquery parallelism ?

(f) How are guard conditions and attribute lists of fragments used during the decomposition of an update request ?

(g) What are the difference among immediate, deferred and detached execution of active rule actions ?

(h) What are the steps of Map Reduce Process ? Discuss with diagrammatic notation.

Unit–I

2. (a) Differentiate specialization and generalization. How type hierarchy is specified in specialization ? Also discuss condition-defined attribute-defined constraints applied on both of these with example.

(b) What are the different architectures and storage issues related to OODBMS ?

3. (a) "Type constructors are used to create complex object structure." Justify. Also discuss the concept of relationship exists in OODB based on type constructors with suitable example.

(b) How the concept of inheritance is achieved in EER model ? Discuss the concept in reference of simple and multiple inheritance.

Unit–II

4. (a) How encapsulation, recursion, selection restriction and multiset aggregation are specified in ORDBMS ?

(b) How the relevance of document can be measured on the basis of given term t ? How indexing is useful in information retrieval ?

5. (a) How query is processed and optimized in ORDBMS ? Give an example also.

(b) Discuss architecture and major components of data warehouse with diagrammatical notation.