

### 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.

Roll No. : .....

Total No. of Questions : 9 ]

[ Total No. of Pages : 4

**67108**

**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.