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MCA 301

III Semester M.C.A. Examination, December 2018
DATABASE MANAGEMENT SYSTEMS
(Repeater)

Time : 3 Hours

Max. Marks : 75

Note : Answer **any five full** questions, **each carries 15 marks.**

1. a) What is a Database ? Give an account of types of Database users. **7**
b) Bring out the differences between a database management system and traditional file management system. **8**
2. a) Discuss three level schema architecture in detail with their significance. **8**
b) How do enhanced entity-relationship model and UML modeling help model data ? Explain. **7**
3. a) Give an account of relational algebraic operations with suitable examples. **8**
b) How does relational calculus differ from relational algebra ? Explain. **7**
4. a) How are entity relationships mapped onto equivalent relational mappings ? Explain with illustrations. **8**
b) Give an account of DDL commands. How are integrity constraints imposed using them ? Explain any four integrity constraints. **7**
5. a) What are transitive dependencies ? How are they eliminated ? Explain with an example. **8**
b) Describe join dependencies. How are they eliminated ? Explain with an example. **7**

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- 6. a) Discuss query optimization techniques. **8**
 - b) Describe how is transaction processing supported in SQL. **7**
 - 7. a) Explain two-phase locking protocol techniques for concurrency control. **8**
 - b) Discuss different properties of a transaction in detail. **7**
 - 8. a) Elaborate on how recovery technique based on deferred update is useful. **8**
 - b) Present ARIES recovery algorithm. How does it help in recovery of a database ? **7**
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