

(Please write your Exam Roll No.)

Exam Roll No. ....

**END TERM EXAMINATION**  
**FIFTH SEMESTER [MCA] DECEMBER 2010**

**Paper Code: MCA327**  
**Paper ID: 44327**

**Subject: Distributed DBMS**

**Time: 3 Hours**

**Maximum Marks: 60**

**Note: Q.1 is compulsory. Attempt one question from each unit.**

**UNIT – I**

- Q 1 (a) Explain the following:- (5)  
(i) Serializability  
(ii) Granularity  
(iii) Well-formed  
Define each of them in context of transaction.  
(b) What are the different approaches to design the data distribution? (5)  
(c) How the fragmentation and allocation of fragments are interrelated? Explain with a suitable example. (5)  
(d) Explain different locking schemes when dealing with multiple copies of data. (5)

**UNIT – II**

- Q 2 What is distributed Database Management System? Why the Distributed Databases are the need for today's organizational structure and incremental growth? How Distributed Database are different from traditional databases? (10)

- Q 3 (a) Explain different time based protocols in the context of distributed database environment. (5)  
(b) Determine the common subexpression in the query and do step by step transformations indicating which rule is applicable at each step-  
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Global relation:-  
**EMP(EMPNUM,NAME,SAL,TAX,MGR NUM,DEPTNUM)**  
**DEPT(DEPTNUM,NAME,AREA,MGRNUM)** (5)

**UNIT – III**

- Q 4 (a) Explain loosely coupled and tightly coupled federated distributed databases. (5)  
(b) State different advantages of Client Server Computing. (5)
- Q5 (a) Explain various types of failures in Distributed databases and how we can handle failures in the distributed database environment? (5)  
(b) Explain 2PC protocol. Why this protocol is a blocking protocol? (5)

**UNIT – IV**

- Q 6 (a). Write short notes on the following:- (5)  
(i) Check Points  
(ii) Distributed Catalog Management  
(b) What is Query Optimization? What are the problems in query optimization? (5)

- Q 7 Explain the formula of measuring cost and benefits of fragment allocation in detail of the following:- (10)
- (a)Horizontal Fragmentation
  - (b)Vertical Fragmentation

**UNIT – V**

- Q8 (a)Discuss various issues in Heterogeneous distributed databases. (5)
- (b)What do you mean by concurrency control? Explain locking as a concurrency control technique in Distributed databases. (5)
- Q9 (a)What are the rules which must be followed when defining the fragments? (5)
- (b)Do all types of fragmentation follow the rules of defining the fragments? Discuss. (5)

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