

Code No: V3146

**R07**

**Set No: 1**

III B.Tech. I Semester Supplementary Examinations, April/May – 2013

**DISTRIBUTED DATABASE**

(Information Technology)

**Time: 3 Hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. Explain various levels of distribution transparency with suitable examples. [16M]
2. a) Discuss the aggregation function evaluation procedure in distributed system.  
b) What are the necessary steps for the transforming from the global queries into fragment queries? [8M+8M]
3. a) Discuss the effect of commuting Joins and Unions in DDB.  
b) Discuss how query optimization is done using AHY algorithm? [8M+8M]
4. Explain serializability in distributed database. [16M]
5. Discuss about deadlock detection using centralized and hierarchical controllers. [16M]
6. a) Explain termination protocols for 3-phase commitment. [8M]  
b) List and explain the rules of quorum based protocol. [8M]
7. Explain transaction management in object DBMS. [16M]
8. a) Explain multi database recovery mechanisms. [8M]  
b) Describe schema integration process in detail. [8M]

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**Set No: 2**

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**Answer any FIVE Questions**

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1. a) Consider the global relations:  
PATIENT(NUMBER, NAME, SSN, AMOUNT-DUE,DEPT,DOCTOR,MED-TREATMENT)  
DEPARTMENT (DEPT,LOCATION,DIRECTOR)  
STAFF (STAFFNUM,DIRECTOR,TASK)  
Define their fragmentation as follows:  
(i) DEPARTMENT has a horizontal fragmentation by LOCATION, with two locations; each department is conducted by one DIRECTOR.  
(ii) There are several staff members for each department, led by the department's director. STAFF has a horizontal fragmentation derived from that of the DEPARTMENT and a semi-join on the DIRECTOR attribute. Which assumption is required in order to assure completeness?  
b) Discuss the levels of distribution transparency in brief. [8M+8M]
2. a) Explain the derived horizontal fragmentation.  
b) Discuss in detail the features of privacy and security. [8M+8M]
3. a) Discuss the objectives of Query processing optimization.  
b) Explain the role of optimization graphs in DDB. [8M+8M]
4. Explain briefly about the following:  
a) Distributed garbage collection.  
b) Pointer swizzling. [10M+6M]
5. a) Write about concurrency control based on locking in centralized databases.  
b) Write about the concurrency control based on locking in distributed databases. [8M+8M]
6. Explain about Catalog Management in Distributed Databases? [16M]
7. a) Explain the various issues in query processing.  
b) Describe the cache consistent object management. [8M+8M]
8. Discuss briefly about Push based technologies? [16M]

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Set No: 3

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(Information Technology)

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**Max Marks: 80**

**Answer any FIVE Questions**  
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1. a) Discuss the distributed transaction model. [8M]  
b) List the architectural aspects of distributed transactions. [8M]
2. a) Explain parametric query optimization. [5M]  
b) Discuss about path indexes. [5M]  
c) Write a note on enumerative algorithms in query processing. [6M]
3. a) What are the effects of computing Joins and Unions? Explain. [8M]  
b) Discuss the problems in query optimization. [8M]
4. a) Explain distributed deadlock detection algorithm. [8M]  
b) Write a detail note on ignore obsolete write rule. [8M]
5. Write about the features of distributed versus centralised databases with illustrations. [16M]
6. When is a distributed concurrency control mechanism said to be correct? Discuss the propositions required for determining the correctness. Prove that 2PL is a correct distributed concurrency control method. [16M]
7. Explain the following:  
a) Multi database Concurrency Control.  
b) World Wide Web Architecture and Protocols. [12M+4M]
8. a) What is Transaction? How transaction management is important in DDB systems?  
b) State the requirements for transaction management in object DBMSs. [10M+6M]

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Set No: 4

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(Information Technology)

**Time: 3 Hours**

**Max Marks: 80**

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1. Write in brief about the following:
  - a) Security issues in distributed databases
  - b) Privacy issues in distributed databases.
  - c) Redundancy problem in distributed databases. [3M+3M+10M]
  
2.
  - a) What are the effects of computing Joins and Unions? Explain.
  - b) Discuss the problems in query optimization. [8M+8M]
  
3.
  - a) Discuss the procedure of transforming a global query into fragmented query.
  - b) Write a note on parametric query. [8M+8M]
  
4.
  - a) Explain how concurrency control in distributed databases is implemented based on locking.
  - b) Explain the centralized and hierarchical communication structure for commit Protocols. [6M+10M]
  
5. List out optimistic methods for distributed concurrency control? Explain them in brief? [16M]
  
6. Explain the following Authorization and Protection problems:
  - a) Site-to-site Protection
  - b) User Identification. [8M+8M]
  
7.
  - a) Explain search space and transformation rules for query processing. . [8M]
  - b) Discuss in detail object identifier management. [8M]
  
8.
  - a) Explain the database integration process. [8M]
  - b) Discuss the database interoperability in the COM/OLE environment. [8M]

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