Code :R7420504 **1**

IV B.Tech II Semester(R07) Regular Examinations, April 2011
DISTRIBUTED DATABASES
(Computer Science & Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

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1. (a) Explain the types of accesses to a distributed database.
   (b) What are the applications of distributed database?
2. (a) Explain the properties of Group-by operation.
   (b) Write a short note on:
      i. join
      ii. semi-join
      iii. projection.
3. (a) What is the importance of query optimization in distributed databases.
   (b) Give a brief note about the following:
      i. Non distributed join
      ii. Distributed join.
4. (a) Give a brief note about the following:
      i. Recovery in centralized systems.
      ii. Communication failures in distributed databases.
   (b) Explain the communication structure for commit protocols.
5. (a) What is difference between distributed and centralized deadlock detection.
   (b) Explain the distributed deadlock detection algorithm.
6. Write the local recovery procedure for 3-phase-commitment.
7. Write a short note on:
   (a) Pointer swizzling
   (b) Object migration
   (c) Distributed object storage
   (d) Object query processing
8. Write a short note on:
   (a) Scheme translation
   (b) Scheme integration
   (c) Database integration.

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Code :R7420504 **2**

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Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
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1. (a) Explain the features of distributed databases versus centralized databases.
   (b) What is integrity constraint? Explain with example.
2. (a) What is parametric queries? Explain with example.
   (b) What are the objectives of data distribution.
3. (a) What are the problems in query optimization.
   (b) Explain the query optimization using AHY algorithm.
4. (a) Explain the properties of transactions.
   (b) Explain the concurrency control based on locking in centralized databases.
5. (a) Explain the conservative time stamp method.
   (b) What is serializability? Explain the serializability in a distributed databases.
6. Write the local recovery procedure for 3-phase-commitment.
7. Write a short note on:
   (a) pointer swizzling
   (b) object migration
   (c) distributed object storage
   (d) object query processing
8. Write a short note on:
   (a) Scheme translation
   (b) Scheme integration
   (c) Database integration.

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Code :R7420504 **3**

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Answer any FIVE questions
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1. (a) What are the components of distributed databases and explain with neat diagram.
   (b) What is fragmentation? Explain the different types of fragmentations.
2. (a) What is query tree? Explain with CUT operation.
   (b) Explain top-down and bottom-up approaches to the design data distribution.
3. (a) What are the objectives in query processing optimization?
   (b) Briefly explain the following methods:
      i. Nested-loop method
      ii. Merge-scan method
4. (a) What are the goals of transaction management?
   (b) Explain the concurrency control based on locking in distributed databases.
5. (a) Explain the basic time stamp mechanism.
   (b) Write a short note on:
      i. Distributed wait-for graph
      ii. Local wait-for graph.
6. Write the termination algorithm for 3-phase-commitment assuming that the coordinator site has failed, that no network partition has occurred and that the operational sites have a consistent view of the network.
7. Briefly explain about the following:
   (a) Query processing issues
   (b) Query execution
8. Write a short note on:
   (a) Push-based technologies
   (b) Multi database recovery
   (c) Query optimization issues.

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Code :R7420504 4

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Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

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1. (a) Explain the reference architecture for distributed databases.
   (b) What are the rules to be followed when defining fragments.
2. (a) Give a brief note about the simplification of joins between horizontally fragmented relations.
   (b) Write a short note on operator tree of a query.
3. (a) Explain the rationale of semi-join reduction in distributed databases.
   (b) What is optimization graph? Explain.
4. (a) Explain the reference model of distributed transaction recovery.
   (b) Explain the 2-phase-commitment protocol.
5. (a) Write about false deadlocks.
   (b) Explain the distributed deadlock prevention approach.
6. Write the termination algorithm for 3-phase-commitment assuming that the coordinator site has failed, that no network partition has occurred and that the operational sites have a consistent view of the network.
7. (a) What is transaction management.
   (b) Explain the transaction management in object DBMS.
8. Write a short note on:
   (a) Push-based technologies
   (b) Multi database recovery
   (c) Query optimization issues.

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