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| Why distributed databases are essential? |
| What is meant by hybrid fragmentation? |
| What is meant by processing? |
| What are the problems in query optimization? |
| Define Transaction? |
| What is meant by deadlock? |
| Define Reliability? |
| What is meant by parallel database? |
| What is the full form of CORBA? |
| What is meant by distributed object storage? |

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| Define Distributed Database? |
| What is Horizontal Fragmentation? |
| What are the layers of query processing? |
| What is meant by query Decomposition? |
| What are the properties of transaction? |
| What are the classifications of concurrency control? |
| What is meant by network partitioning? |
| What are the reliability protocols in distributed systems? |
| What are the kinds of object distribution design? |
| What do you mean by horizontal class partitioning? |

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| What is distributed data processing? |
| What do you mean by data security? |
| What are the objectives of query processing? |
| What is meant by R\* algorithm? |
| What are the types of Transaction? |
| Define serializability? |
| What is full from of MTBF , MTTR? |
| What is blocking? |
| How do you perform object management? |
| Mention any 2 functions performed by ORB? |
| What are the distribution design issues? |
| What are the information requirements during allocation? |
| What are the layers of query processing? |
| What is query optimization? |
| What are the termination conditions of transaction? |
| What is meant by deadlock? |
| What are the types of failures in distributed DBMS? |
| Draw a diagram of logging interface. |
| Define object identity? |
| Define inheritance? |

**Long Questions:**

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|  | a) Explain the advantages & disadvantages of distributed database?  b) Write about the features of distributed databases? |
|  |  |
|  | Write about different types of fragmentation in detail with suitable examples? |
|  | a) Explain briefly about characteristics of query processors?  b) Explain layers of query processing? |
|  |  |
|  | a) Discuss briefly about for query optimization?  b) Explain the differences between centralized query optimization and distributed query optimization? |
|  | Explain briefly about ACID properties with suitable examples? |
|  |  |
|  | Explain briefly about timestamp-based concurrency Control algorithms? |
|  | a) Explain by means of a diagram the interface between the local recovery manager & buffer manager?  b) Explain briefly about network partitioning. |
|  |  |
|  | Explain Parallel database system architectures with neat diagrams? Explain its advantages and disadvantages? |
|  | a) Explain briefly about architectural issues in distributed object DBMS?  b) Explain about object models in distributed object DBMS? |
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|  | a) Explain about differences between OODBMS & ORDBMS?  b) Explain about inheritance concept? |

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|  | a) Explain about Architectural Models for DDBMS.  b) Write about the features of distributed databases? |
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|  | Given a global relation EMP (EMPNUM, NAME, SAL, TAX, MGRNUM, DEPTNUM) Write the mixed fragmentation definition and fragmentation tree of relation EMP. |
|  | a) Explain about semi join based algorithm with example?  b) Explain layers of query processing? |
|  |  |
|  | Explain about Centralized query optimization? types of Centralized query optimization? |
|  | a) Define serializability & types of schedules?  b) Explain about Conflict serializability? |
|  |  |
|  | Explain briefly about deadlock management? |
|  | Explain about parallel database system & shared memory architecture with its advantages and disadvantages? |
|  |  |
|  | Draw a diagram for fully memory hierarchy managed by LRM and BM? |
|  | Explain the following in detail:  a) Distributed Component Object Model.  b) Object query processing |
|  |  |
|  | a) Explain Object Management Architecture?  b) Explain about Inheritance concept? |

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|  | Why we need to have distributed databases, and distinguish the features of distributed databases with centralized databases.   |  | | --- | |  | |
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|  | Explain briefly about allocation model? |
|  | Explain briefly about query decomposition & data localization. |
|  |  |
|  | Explain briefly about Hill climbing algorithm & Semi join based algorithm? |
|  | Explain about Concurrency control? Explain different kinds of Concurrency control protocols? |
|  |  |
|  | a) Explain briefly about Time stamp ordering protocol & algorithm?  b) Explain about four conditions in deadlock? |
|  | a) Explain about Fault tolerance in distributed systems?  b) Explain about Site failures in distributed systems? |
|  |  |
|  | a) Explain about local and distributed reliability protocols?  b) Explain about database clusters? |
|  | Explain the following in detail:   1. CORBA 2. Object identity 3. Inheritance 4. ORB 5. IDL |
|  |  |
|  | a) Write in brief about Object Query processing issues?  b) Explain briefly about persistence programming languages? |

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|  | Explain about problem areas & promises of DDBMS? |
|  |  |
|  | Define Distributed database? Explain briefly about design issues of distributed database? |
|  | What is query processing & explain the characteristics of query processors? |
|  |  |
|  | Explain briefly about R\* algorithm & semi join based algorithm? |
|  | Explain briefly about optimistic concurrency control algorithm & time stamped concurrency algorithm? |
|  |  |
|  | Define deadlock? Explain briefly about four conditions of deadlock with neat diagrams? |
|  | a) Explain about Fault tolerance in distributed systems?  b) Explain about Site failures in distributed systems? |
|  |  |
|  | Explain the following in detail.  a) Load balancing b) Database clustering |
|  | Explain about object models and distributed object storage? |
|  |  |
|  | Define object identity? Explain about persistence programming languages? |

**QUESTION BANK**

**UNIT- 1:**

**PART – A (2 Marks):-**

1. Define Distributed Database.
2. Why distributed databases are essential?
3. What are the components of DDBMS?
4. What do you mean by DBMS standardization?
5. What are the three kinds of distributed dbms architecture?
6. What is Horizontal Fragmentation?
7. What is Vertical Fragmentation?
8. What is meant by Partitioning Algorithms?
9. What are the distribution design issues?
10. What is meant by hybrid fragmentation?
11. What are the information requirements during allocation?
12. What do you mean by data security?

**PART – B (16 Marks):-**

1. Explain the advantages & disadvantages of distributed database.
2. Explain Briefly about DDBMS Architecture.
3. Explain about Architectural Models for DDBMS.
4. Explain about DBMS Standardization? Give Examples.
5. What are the distribution design issues? Explain with examples.
6. Explain briefly about Fragmentation with suitable examples.
7. Explain allocation model.
8. Explain views in centralized DBMSs with examples.

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**UNIT- 2:**

**PART – A (2 Marks):-**

1. What is meant by processing?
2. What are the objectives query of query processing?
3. What are the layers of query processing?
4. What is query optimization?
5. What is meant by query Decomposition?
6. Give an example o operation tree?
7. What is meant by R\* algorithm?

**PART – B (16 Marks):-**

1. Explain about Complexity of relational algebra operations.
2. Explain query processing with examples.
3. Briefly describe the characterization of query processors.
4. Explain distributed query optimization algorithms.
5. Explain briefly about query decomposition & data localization.
6. Explain about query processing problems.

**UNIT- 3:**

**PART – A (2 Marks):-**

1. Define Transaction?
2. What are the termination conditions of transaction?
3. What are the properties of transaction?
4. What are the types of Transaction?
5. What are the types of workflow?
6. What are the classifications of concurrency control?
7. What is meant by deadlock?

**PART – B (16 Marks):-**

1. Explain briefly about transaction management.
2. Explain serializability theory with an example.
3. Explain briefly about timestamp-based concurrency algorithms.
4. Explain relaxed concurrency control.

**UNIT- 4:**

**PART – A (2 Marks):-**

1. Define Reliability?
2. What are the reliability concepts?
3. What are the types of failures in distributed DBMS?
4. What is meant by network partitioning?
5. Draw a diagram of logging interface.
6. What are the reliability protocols in distributed systems?
7. What are the parallel execution problems?
8. What are the executions of LRM commands?
9. What is meant by parallel database.

**PART – B (16 Marks):-**

1. Explain the failures in DDBMS.
2. Explain by means of a diagram the interface between the local recovery manager & buffer manager.
3. Draw a diagram for fully memory hierarchy managed by LRM and BM.
4. Draw a diagram of state transactions in 3PC protocols.
5. Explain briefly about network partitioning.
6. Explain general architecture of a parallel database system & shared memory architecture.
7. Explain through diagrams the following
   1. Shared disk architecture.
   2. Shared nothing architecture.
   3. Hierarchical architecture.
   4. Cache-only memory architecture.
8. Explain about parallel execution for hierarchical architecture.

**UNIT- 5:**

**PART – A (2 Marks):-**

1. Define abstract data types.
2. What are the kinds of object distribution design?
3. What is meant by Pointer Swizzling?
4. What do you mean by horizontal class partitioning?
5. What do you mean by Vertical class partitioning?
6. How do you perform object management?
7. What is meant by distributed object storage?

**PART – B (16 Marks):-**

1. Explain briefly about architectural issues in distributed object DBMS?
2. Explain about Partitioning algorithms
3. Explain briefly about object storage.
4. Explain briefly about transaction management through examples.