



12. (a) Explain the :
- (i) Six basic operators in Relational Algebra. (8)
  - (ii) Triggers. (8)

Or

- (b) Discuss about :
- (i) Aggregate function and Outer join. (8)
  - (ii) Distributed databases and client server databases. (8)
13. (a) Explain Join Dependencies and fifth normal form. Provide examples.

Or

- (b) Explain First, Second and Third normal forms. Provide examples.
14. (a) Write down any three recovery techniques in Transaction Management.

Or

- (b) Discuss about Locking and Concurrency problem. Also write a note on locking protocols.
15. (a) Explain Static and Dynamic Hashing techniques.

Or

- (b) Describe in detail B and B+ tree Index files.
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