

TE/SEM5/IT/CBCS/ADMT

Seat No.

Time: 3 hours

Marks: 80

- N.B.:** 1. Question no. 1 is compulsory.  
 2. Attempt any Three from remaining questions.  
 3. Give examples wherever required.

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- Q 1 a List out the twelve rules for distributed DB. 5  
 b Explain Shared Memory and Shared Nothing Architecture for Parallel DBs. 5  
 c Why BCNF is called as stricter than 3NF? Justify your answer. 5  
 d What is Materialized View, What is its utility? 5
- Q 2 a Explain Discretionary Access Control, Mandatory Access Control and Role- Based Access Control in brief. 10  
 b Explain Significance of each step in ETL Process, also explain types of data extraction and data transformation. 10
- Q 3 a Explain Sort-Merge Join and HASH Join. 10  
 b Explain Wait-Die and Wound-Wait methods for Deadlock Prevention. Compare them in terms of no. of Possible rollbacks and Starvation. 10
- Q 4 a Explain Star and Snow Flake Schema. Specify their Pros and Cons. 10  
 b Explain Aries Algorithm in detail. 10
- Q 5 a Consider a data warehouse for weather related data like region, date and temperature. Using this example explain all the OLAP operations 10  
 b Explain Primary Horizontal, Derived Horizontal and Vertical Fragmentation with example. Comment on Completeness, Reconstruction and Disjointness Properties. 10
- Q 6 Short Note on: 5  
 a Temporal databases 5  
 b Spatial Databases 5  
 c Inconsistent read, fuzzy read and phantom read problems in concurrent schedules. 5  
 d Data Marts 5

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