

IV B.Tech I Semester Supplementary Examinations, April/May 2005
DATA BASE MANAGEMENT SYSTEMS
(Electrical & Electronic Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define the following with suitable examples:
 - i. Relation
 - ii. Cardinality of a relation
 - iii. Super-key
 - iv. Candidate key.(b) Explain the structure of relational model.
2. (a) What is the role of SQL in a database architecture.
(b) What are the notations used in SQL commands.
3. (a) Describe three popular file organization techniques on disks and compare them.
(b) Discuss the process of disk initialization.
4. (a) Consider the following SQL query for a bank database
Select T.branch-name
From branch T, branch S
where T.Assets > S.assets and S.branch-city="HYDERABAD"
Write an efficient relational algebra expression that is equivalent to the query.
(b) Define query optimization and at what point during query processing does optimization occur?
5. (a) Discuss the reasons for converting SQL queries into relational algebra queries before optimization is done.
(b) What is meant by query execution plan? Explain its significance.
6. (a) What is Normalization? Discuss the first, second and third normal forms with examples.
(b) Explain with an example why 4NF is more desirable normal form than BCNF.
7. (a) Discuss the different types of transaction failures.
(b) Which component of DBMS is responsible for concurrency control? How is this feature used to resolve conflicts?
8. Answer the following briefly:
 - (a) How is check pointing done in ARIES?

- (b) Can a second end check point record be encountered during analysis phase?
- (c) Why is the use of CLRS important for the use of UNDO actions that are not the physical inverse of the original update?

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