

## DBMS.

- 4 marks

## Chapter - 1 Introduction

- o Data abstraction
- o Level of data abstraction + Example
- o Instances and schemes
- o Data independence
- o Importance of data independence in data modeling
- o Physical v/s logical data independence
- o File processing system
- o DBMS v/s File processing system
- o DDL, DML, DCL - Def<sup>n</sup>, Example

## Chapter - 2

- 12 marks

(1) o ER diagram - 8 marks.

- 4-marks (2) o Data models + Types + Diff<sup>n</sup> bet<sup>n</sup> different types
- o Strong, Weak entity set with example - Imp.
  - o Discriminator
  - o Keys, Types of keys
  - o Total & partial participation
  - o Degree & cardinality of a relationship
  - o Generalization & Specialization + Example.

## Chapter - 3 Relational language &amp; Relational models - 12 to 16 marks

- 6/8 marks (1) SQL Queries + Query - By Example (QBE)
- 6/8 marks (2) Relational Algebra

## Chapter - 4 Database constraint &amp; Normalization - 12 marks

- o Integrity & domain constraints
- o Assertion & trigger
- o Functional dependency - Trivial, Non-trivial; Partial, Full
- VS Imp o Normalization, 1NF, 2NF, 3NF, BCNF<sup>4NF</sup> + Example
- o Decomposition + Properties
- o Importance of normalization

## Chapter - 5 Query Processing &amp; Optimization - 8 marks

- o Query Processing - Def<sup>n</sup>, Steps, Block diagram
- o Query Optimization - Heuristic
- Cost based
- o Pipelining
- o Materialization
- o Query Evaluation
- o Query Optimization of Relational Algebra

## Chapter 6: File Structure &amp; Hashing - 8 marks

- o RAID Levels - Imp.
- o Indexing, Types
- VS Imp o Dense, Sparse, Clustering: Def<sup>n</sup>, Ex<sup>pl</sup>, Comparison
- o Hashing - Static & Dynamic - Imp
- o B+ tree Index
- o Remote Backup System, (Def<sup>n</sup>, Architecture, Ex<sup>pl</sup>)
- o Fixed & Variable length Records



12  
- 8 marks

## Chapter 7: Transaction Processing

- o Transaction
- o Transaction States
- Imp o ACID Properties
- o Schedule
- o Serial Schedule

### Imp o Serializability

↳ Conflict } Differences, Operation  
↳ View }

- o Lock based protocol - Two phases
- o Deadlock - Prevention - Imp
- Avoidance
- Detection

## Chapter 8: Crash Recovery - 6 marks

- o Crash Transaction failure
- o Stable Storage
- o Reason for transaction failure
- o Log Based Recovery - Imp } + Differences
- o Shadow Paging - Imp
- o Redo & Undo Phase
- o Transaction Rollback
- o Checkpoint
- o Explain for given log:

## Chapter-9: Advanced database Concepts - 6 marks

- o Distributed DBMS - Imp + Types (Homogeneous vs Heterogeneous)
- o Properties
- o Data Fragmentation - Types
- o Parallel DBMS
- o Data warehouse - Imp.
- o Spatial Database System - Imp + Applications.
- o Object Oriented Database + Significance.