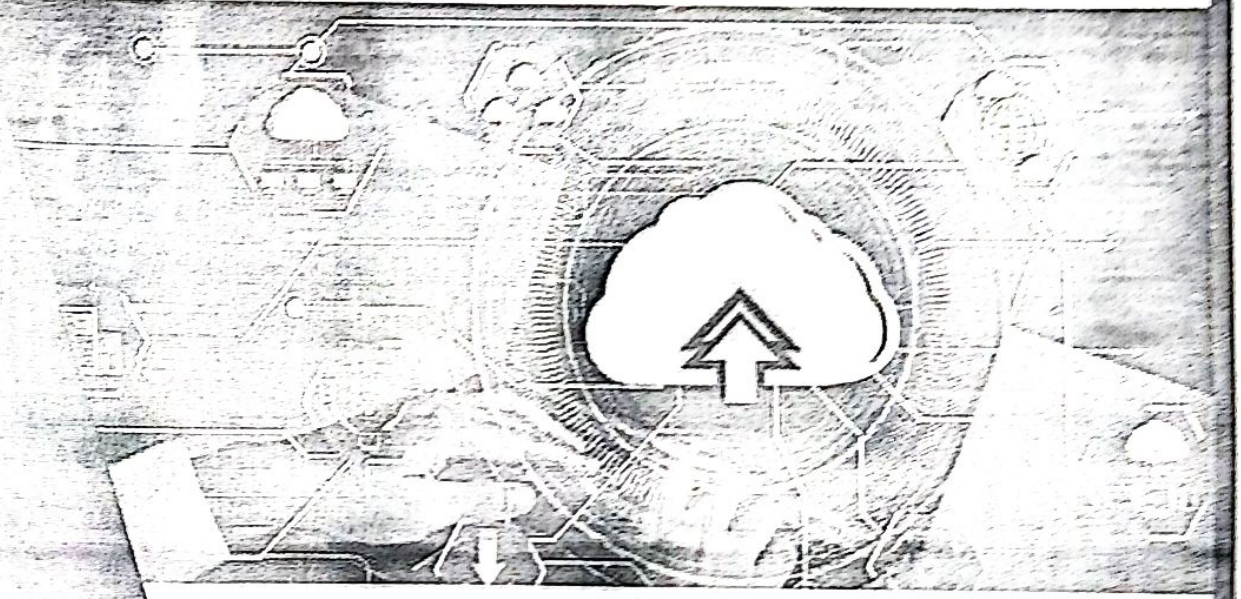
MCAD 103

Master of Computer Application



Database Management Systems

JAMIA HAMDARD

(Deemed to be University)

SEMESTER - II

CAD 103- Database Management Systems

UNIT 1

Introduction to database system concept
An overview of database system, basic database system terminology, database vs traditional file approach, data models, schemas and instances. 3-schema architecture and data independence, Database Languages.

UNIT2

ER model
Entity, entity types, attributes and keys, relationship and relationship types and structural constraints. Weak entity types, ER diagrams, Naming conventions and design issues.

UNIT 3

Relational model
Structure of Relational databases, relational algebra, integrity constraints: Domain constraints, referential constraints, functional dependencies.

UNIT 4

Relational query languages
SQL : DDL, constraints and schema changes in SQL, Insert delete and update statements, Views, Aggregate functions, Nested sub queries.
Introduction to SQL *plus, functions procedures triggers etc.

Design theory for relational databases: What constitutes a bad database design, Decomposition, Insert, delete and update anomalies. Normalization using functional dependencies. First, second, third normal forms and BCNF.

UNIT 5

Indexing and hashing:
Hashed files, indexed files Single-level index, multilevel index, dynamic multilevel indexing using B and B+ trees.

UNIT 6

Concurrency control techniques:
Basic Concepts: Items, locks, Deadlocks, serializability, Locking two phase locking & Time stamping ordering protocols.

UNIT 7

Database recovery technique:
Failure classification, recovery concepts, recovery techniques based on deferred and immediate update, shadow paging.