Advanced Database Management Systems

Unit-I

1. Database System Application, purpose, view, Database Languages.
2. Relational Databases, Database design, Object based and Analysis.
3. Entity Relationship models (E-R diagrams) Ex of Database Design for Banking Enterprise and unified modeling language.
4. Relational algebra, structure of Relational databases, Modification of the Databases, modification of the Database

Unit-II

1. SQL Definition, Structures, Data Types and Schemas.
2. Sets Aggregate, Nested sub Queries, Complex Queries.
3. Integrity Constraints, Embedded/Dynamic SQL.
4. PL/SQL Programming Controls structures, Functions, Exception handling, Cursors, Triggers, Packages.

Unit-III

1. Object-based Databases, Complex data types, Structures types and inheritance in SQL, array and Multiset types in SQL.
2. O-R features object identity and reference types in SQL,
3. OO VS OR Persistent Programming Languages
4. XML-Structure, Document Schema.
5. API in XM, XML Application.

Unit-IV

1. Query Cost-Selection, Operation-Sorting Joint operation.
2. Evaluation of Expression, Choice of Evaluation Plans.
3. Transformation of Relational Expressions, Estimating Statistics of Expression Results.

Unit-V

1. Implementation of Atomicity and Durability-Concurrent Executions.
2. Serializability, Recoverability and Implementation of Isolation-Testing for Serializability.
3. Lock Based, Timestamp-Based Protocols-Validation-Based protocols.
4. Multiple Granularity and Multiversion Schemes.
5. Deadlock handling-Insert and Delete Operations, Weak Levels of Consistency, Concurrency in Index Structures.