1. ER Model:

- Conceptual design with entities, attributes, and relationships.

2. Relational Model:

- Uses tables (relations), tuples (rows), and attributes (columns).

3. SQL:

- DDL: CREATE, ALTER, DROP.
- DML: SELECT, INSERT, UPDATE, DELETE.
- DCL: GRANT, REVOKE.
- TCL: COMMIT, ROLLBACK.

4. Normalization:

- Removes redundancy and anomalies.
- 1NF: Atomic values.
- 2NF: Full functional dependency.
- 3NF: No transitive dependency.
- BCNF: Advanced version of 3NF.

5. Transactions:

- Sequence of operations.
- ACID: Atomicity, Consistency, Isolation, Durability.

6. Concurrency Control:

- Locks, Serializability, Deadlocks.

7. Indexing:

- Improves retrieval speed.
- Types: Single-level, Multi-level, B+ trees, Hash indexing.

8. Important Formulae & Concepts:

- Functional Dependency: A → B (B is functionally dependent on A)
- Degree of a relation: Number of attributes (columns).
- Cardinality: Number of tuples (rows).
- Anomaly Types:
  - Insertion Anomaly
  - Deletion Anomaly
  - Update Anomaly