**Unit 1: Introduction to DBMS**

1. Define DBMS and explain its objectives.
2. Discuss the importance of DBMS in modern applications.
3. List and explain the merits and demerits of DBMS.

**Unit 2: Database Design, Architecture, and Model**

1. Explain the levels of database architecture and data independence.
2. Differentiate between hierarchical, network, and relational data models.
3. Draw and explain an ER diagram for a library management system, including weak entities and relationships.
4. How is an ER diagram converted into relational tables? Explain with an example.

**Unit 3: Relational Database Model**

1. Define super key, candidate key, primary key, and foreign key with examples.
2. Explain the operations of relational algebra with examples.
3. Differentiate between natural join, outer join, and cross join.

**Unit 4: Database Normalization**

1. What is normalization, and why is it important?
2. Explain 1NF, 2NF, and 3NF with examples.
3. Discuss BCNF and provide an example where BCNF is needed.

**Unit 5: Creating and Altering Database and Tables (SQL)**

1. Write SQL commands to create a table with the following constraints: primary key, foreign key, default, and check.
2. How can you add and drop attributes from an existing table? Provide SQL examples.
3. Explain the use of the DROP statement in SQL.

**Unit 6: Manipulating and Querying Data**

1. Write an SQL query to retrieve data using GROUP BY and ORDER BY.
2. Explain the difference between INNER JOIN and OUTER JOIN with examples.
3. Write SQL queries to demonstrate nested queries.
4. How can you delete rows from a table? Explain with an example.

**Unit 7: Developing Stored Procedures, DML Triggers, and Indexing**

1. What are stored procedures? Write an example of creating and executing one.
2. Explain the concept of triggers and their limitations.
3. Define indexing and explain its types.

**Unit 8: Query Processing and Security**

1. What is query optimization? Explain its importance.
2. Discuss the role and responsibilities of a DBA.
3. What are the different types of database security? Provide examples.

**Unit 9: Transaction and Concurrency Control**

1. Define a transaction. Explain the properties of a transaction (ACID).
2. Explain the concept of serializability in transactions.
3. What is a deadlock? How can it be handled?
4. Compare lock-based and time-based protocols in concurrency control.