UNIT – 1

1. What is DBMS? Compare and Contrast file Systems with database systems.
2. Discuss different types of Data models.
3. Explain the structure of DBMS with a neat diagram.
4. What is the E-R model? Explain in detail about components of the E-R Model.
5. What is data independence and how does a DBMS support it? Explain.
6. Explain in detail about different levels of abstraction in DBMS.

UNIT – 2

1. Explain about Relational calculus with example queries.
2. Explain about Joins in DBMS with examples.
3. Explain Constraints in SQL with examples.
4. Explain in detail about Relational Algebra with examples.
5. Explain Key constraints in SQL with examples.
6. What is a view? How to specify a view? Write about view implementation techniques with example queries.

UNIT – 3

1. Explain DDL, DML, and TCL commands with example Queries.
2. Explain about Aggregate Functions in DBMS with example queries.
3. Explain in detail about 1NF, 2NF and 3NF with suitable examples.
4. Explain 4NF, 5NF normal forms with examples.
5. Explain the following Operators in SQL with examples:
   i) SOME ii) IN iii) EXCEPT
   iv) UNION v) ANY vi) ALL
6. Explain in detail about Triggers and Active databases.

UNIT – 4

1. What is transaction? Explain the ACID properties of the transaction.
2. Explain multiple granularity of locking protocol with example.
3. What is serializability? Explain Conflict serializability with an example.
4. What is Transaction? Explain the life cycle of the transaction with a neat diagram.
5. Discuss about transaction recovery techniques.
6. What is a lock in DBMS? Discuss different types of locks in DBMS.

UNIT - 5

1. Define File Organization. Explain about types of file organization.
2. Define Indexing and explain about types of indexing.
3. What is Hashing? Explain in detail about hashing techniques.
4. What is a B+ tree? Explain in detail the operations of B+ trees.
5. Explain about Indexed sequential access method (ISAM).