Unit – I

1. Explain the advantages of DBMS over File System.
2. Explain with neat diagram three levels of data abstraction.
3. Difference between logical and physical independence. Which one is harder to achieve?
4. Explain about data storage and querying.
5. Explain about system architecture with neat diagram.
6. Explain different types of database users and explain about database administrator.
7. Explain about structure of RDBMS.
8. Explain about different types of keys in RDBMS.

Unit – II

1. Explain about fundamental operations in relational algebra with suitable examples.
2. Explain about various aggregate functions in SQL.
3. Explain about DDL, DQL, DCL and DML statements.
4. Explain order by, group by, having, as select constructs in SQL.
5. With suitable examples, illustrate various types of join operations.
6. What is a view? Write short notes on view.
7. Explain about different data types in SQL.
8. Explain about tuple and domain relational calcus.
9. Explain about different types of Integrity constraints.

Unit – III

1. What is ER model? Explain its concepts.
2. Summarize the following constraints in E-R Model.
(i) Cardinality constraints (ii) Participation constraints (iii) Keys
3. What is Functional dependency? Explain types of functional dependencies with suitable examples? List down the advantages of functional dependency
4. List out various Armstrong axioms with example FDs.
5. What is meant by normal forms. Explain different types of normal forms.
6. Explain different type of inference rules.
7. Explain about functional dependency theory.

Unit – IV

1. Explain lock based and non-lock based protocols with suitable examples.
2. With neat diagram explain state diagram of a transaction and discuss ACID properties of a transaction model.
3. Write notes on the following. (i) Serializable schedules (ii) Recoverable schedules
4. What is Serializability? Explain Conflict and view serializability with suitable examples.
5. What is the concurrency control method? Discuss various problems that could arise whenever it is not controlled
6. What is the purpose of database recovery and explain the log-based recovery algorithm?
7. Explain the purpose of the checkpoint mechanism. How often should checkpoints be performed?
8. Explain various properties of a transaction.
9. Explain the different algorithms for decomposition.
10. Explain transaction isolation levels
11. Explain snapshot isolation levels
12. Explain about transaction state diagram with examples.