

MODEL PAPER – 1
B.Sc / B.Com (Computer Applications)
Paper: Database Management System
Time: 3 Hours | Max Marks: 80

✓ SECTION – A (Short Answer Questions)

Answer any EIGHT ($8 \times 4 = 32$)

1. Define DBMS and its advantages
 2. What are Database Users and DBA
 3. Define Primary Key and Foreign Key
 4. Explain Relational Model
 5. What is E-R Diagram
 6. Define Functional Dependency
 7. What is Normalization
 8. Define Client-Server Architecture
 9. What is SQL
 10. Define Aggregate Functions
 11. What is Join
 12. Define Transaction in DBMS
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✓ SECTION – B (Essay Type Questions)

Answer ALL questions ($4 \times 12 = 48$)

13. (a) Explain Database System Architecture and Database Users

OR

- (b) Explain Relational Model with structure and operations

14. (a) Explain E-R Model with neat diagram

OR

- (b) Explain Normalization (1NF, 2NF, 3NF) with examples

15. (a) Explain SQL queries (SELECT, INSERT, UPDATE, DELETE) with examples

OR

- (b) Explain Aggregate functions and Nested Queries

16. (a) Explain Joins in SQL with examples

OR

- (b) Explain Transactions and ACID properties

MODEL PAPER – 2
B.Sc / B.Com (Computer Applications)
Paper: Database Management System
Time: 3 Hours | Max Marks: 80

✓ SECTION – A (Answer any 8) ($8 \times 4 = 32$)

1. Define Database System and its components
 2. What are DBMS languages (DDL, DML, DCL)
 3. Define Candidate Key and Super Key
 4. Explain Schema and Instance
 5. What is Entity and Attribute
 6. Define Functional Dependency with example
 7. What is 1NF
 8. Define SQL Data Definition Language
 9. What is View in SQL
 10. Define Aggregate Functions
 11. What is Integrity Constraint
 12. Define Transaction
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✓ SECTION – B (Answer ALL) ($4 \times 12 = 48$)

13. (a) Explain Database Architecture and DBMS advantages

OR

(b) Explain Keys and Schema diagrams in DBMS

14. (a) Explain E-R Model and ER Diagram with example

OR

(b) Explain Normalization (1NF, 2NF, 3NF) with examples

15. (a) Explain SQL Queries with examples (SELECT, INSERT, UPDATE, DELETE)

OR

(b) Explain Set Operations and Aggregate Functions

16. (a) Explain Joins and Views in SQL

OR

(b) Explain Transactions and Integrity Constraints

MODEL PAPER – 3
B.Sc / B.Com (Computer Applications)
Paper: Database Management System
Time: 3 Hours | Max Marks: 80

✓ SECTION – A (Answer any 8) ($8 \times 4 = 32$)

1. Define DBMS and its applications
 2. What are Database Users
 3. Define Primary Key, Foreign Key
 4. Explain Relational Algebra operations
 5. What is E-R Model
 6. Define Normalization
 7. What is Client-Server Architecture
 8. Define SQL Query Language
 9. What is NULL value in SQL
 10. Define Nested Query
 11. What is Join operation
 12. Define ACID properties
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✓ SECTION – B (Answer ALL) ($4 \times 12 = 48$)

13. (a) Explain Relational Model and its operations

OR

(b) Explain Database Design process

14. (a) Explain Functional Dependency and Normal Forms

OR

(b) Explain E-R Diagram with constraint

15. (a) Explain SQL queries and Aggregate functions

OR

(b) Explain Nested Queries with examples

16. (a) Explain Joins and SQL operations

OR

(b) Explain Transactions and Database recovery concepts

MODEL PAPER – 4
B.Sc / B.Com (Computer Applications)
Paper: Database Management System
Time: 3 Hours | Max Marks: 80

✓ **SECTION – A (Answer any 8) ($8 \times 4 = 32$)**

1. Analyze the need for DBMS over file system
2. Explain three-schema architecture
3. Differentiate super key and candidate key
4. Define E-R diagram and its components
5. What is Functional Dependency with example
6. Explain 2NF with example
7. Define SQL constraints
8. What is view in SQL and its advantages
9. Explain types of joins
10. Define transaction and ACID properties
11. What is NULL value in SQL
12. Define trigger

✓ **SECTION – B (Answer ALL) ($4 \times 12 = 48$)**

13. (a) Compare DBMS and File System with advantages

OR

(b) Explain database architecture and its components

14. (a) Design an E-R diagram for a student database system

OR

(b) Explain normalization process up to 3NF with examples

15. (a) Write and explain SQL queries for CRUD operations

OR

(b) Explain aggregate functions and nested queries with examples

16. (a) Explain join operations with real-time examples

OR

(b) Discuss transaction management and concurrency issues

MODEL PAPER – 5
B.Sc / B.Com (Computer Applications)
Paper: Database Management System
Time: 3 Hours | Max Marks: 80

✓ **SECTION – A (Answer any 8) ($8 \times 4 = 32$)**

1. Define database and its characteristics
2. Explain types of database users
3. Define primary key and foreign key with example
4. What is relational algebra
5. Explain entity, attribute and relationship
6. Define 1NF and 3NF
7. What is SQL DML commands
8. Explain GROUP BY clause
9. Define view and index
10. What is join condition
11. Define transaction state
12. What is recovery in DBMS

✓ **SECTION – B (Answer ALL) ($4 \times 12 = 48$)**

13. (a) Explain DBMS applications and advantages

OR

(b) Explain schema and instance with examples

14. (a) Draw and explain E-R diagram for library system

OR

(b) Explain functional dependency and normalization

15. (a) Write SQL queries for:

- Create table
- Insert data
- Select with condition

OR

(b) Explain aggregate functions, GROUP BY and HAVING

16. (a) Explain joins and views with examples

OR

(b) Explain transaction management and recovery techniques

UNIT-WISE IMPORTANT QUESTIONS

■ UNIT-I (DBMS INTRODUCTION & RELATIONAL MODEL)

- Explain Database System Applications & Purpose ★ ★ ★
- Explain Database Architecture & Users ★ ★
- Define Database Languages (DDL, DML, DCL) ★ ★ ★
- Explain Relational Model & Structure of Databases ★ ★ ★
- Define Keys (Primary, Foreign, Candidate) ★ ★ ★
- Explain Relational Operations ★ ★
- Write about Database Design concepts ★ ★

■ UNIT-II (E-R MODEL & NORMALIZATION)

- Explain E-R Model with diagram ★ ★ ★ ★
- Define Entity, Attribute, Relationship ★ ★ ★
- Explain Constraints in ER Model ★ ★
- Explain Reduction of ER Model to Relational Model ★ ★ ★
- Explain Functional Dependency ★ ★ ★
- Explain Normalization (1NF, 2NF, 3NF) ★ ★ ★ ★
- Write about Decomposition using Functional Dependency ★ ★ ★

■ UNIT-III (ARCHITECTURE & SQL BASICS)

- Explain Database System Architectures (Centralized, Client-Server) ★ ★ ★
- Write about Distributed Database Systems ★ ★
- Explain Basic SQL Queries (SELECT, INSERT, UPDATE, DELETE) ★ ★ ★ ★
- Explain Aggregate Functions (SUM, AVG, COUNT) ★ ★ ★
- Explain Set Operations (UNION, INTERSECT) ★ ★
- Explain Nested Queries ★ ★ ★
- Write about NULL values in SQL ★ ★

■ UNIT-IV (INTERMEDIATE & ADVANCED SQL)

- Explain Joins (Inner, Outer, Natural) ★ ★ ★ ★
- Explain Views in SQL ★ ★ ★
- Explain Transactions & ACID Properties ★ ★ ★ ★
- Explain Integrity Constraints ★ ★ ★
- Explain SQL Data Types & Schemas ★ ★
- Write about Authorization in DBMS ★ ★
- Explain Triggers & Procedures ★ ★ ★