



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
QUESTION BANK

Sub code / Subject: CS1301 / DBMS

Year/Sem : III / V

UNIT I

INTRODUCTION AND CONCEPTUAL MODELLING

PART-A (2 Marks)

1. Define Entity and entity sets.
2. Define role in Database Administrator.
3. Define DBMS.what are the advantages of DBMS?
4. What is meant by E-R model? Why?
5. Give some shapes for which purpose in E-R model?
6. What is meant by Aggregation in E-R?
7. Define File system.
8. When we realize DBMS better to FS?
9. How we overcome inconsistency problem?
- 10.Example query for DDL and DML?
- 11.Compare Procedural and Non Procedural languages?
- 12.Define super key and candidate keys with suitable example.
- 13.Define instances and schemas.
- 14.Define data dictionary.
- 15.Define procedural language and non procedural language.

PART-B

1. a. Explain the architecture of DBMS (8)
b. Compare File systems with database systems (8)
2. What is meant by Relational calculus? Query examples for tuple and domain relational calculus? (16)
3. Explain all types of data models (16)
4. Explain E-R Model concept and extended E-R model. (16)
5. Define relational algebra. With suitable example. (16)

6. Roles of data base administrator and the details of aggregate function queries (16)
7. a. With relevant examples discuss the following in SQL
 - i. DDL
 - ii. DML
 - iii. DCL
 - iv. Views (8)
- b. Construct an ER diagram for a car insurance company that has a set of customers, each of whom owns one/more cars. Each car has associated with it zero to any number of recorded accidents. (8)

UNIT II

RELATIONAL MODEL

PART-A (2 Marks)

1. Name the different types of joins supported in SQL
2. Why it is necessary to decompose a relation?
3. Define view and their syntax
4. What are the types of join operation.
5. What is meant by 1NF?
6. What is meant by 2NF?
7. Why we go for decomposition?
8. Define Domain constraints, General constraints.
9. How we provide lossless join?
10. What is meant by Functional dependency?

PART-B

1. What is normalization? Explain all Normal forms. (16)
2. a) What is meant by Selection and projection used in Relational algebra? (8)
b) How we made lossless and lossy-join in relational model? (8)
3. a) Define class Hierarchies and Aggregation? (8)
b) Write about decomposition preservation algorithm for all FD's. (8)
4. a) Explain the strength and weakness of the Triggers mechanism and update views in stored procedure. (8)
b) What is meant by Integrity and security? (8)
5. Consider the following relational schema

Employee(empno,name,office,age)

Books(isbn,title,authors,publisher)

Loan(empno,isbn,date)

Write the following queries in relational algebra.

- a. Find the names of employees who have borrowed a book published by McGraw-Hill. (4)
 - b. Find the names of employees who have borrowed all books published by McGraw-Hill. (4)
 - c. Find the names of employees who have borrowed more than five different books published by McGraw-Hill. (4)
 - d. For each publisher, find the names of employees who have borrowed more than five books of that publisher. (4)
- 6.Explain the details about embedded and dynamic SQL (16)
- 7.Explain functional dependency concepts (16)

UNIT III

DATA STORAGE AND QUERY PROCESSING

PART-A (2 Marks)

1. What is meant by fixed and variable record length?
2. How heap files are formed as page directory?
3. What is meant by RAID?
4. How we done Buffer replacement policy?
5. List out Disk components.
6. Define Buffer size.
7. Why we not stored everything in main memory?
8. DBMS Vs. OS file system.
9. What is meant by Disk storage.
10. What is meant by redundant data.

PART-B

1. a) What is Raid? List the different levels in Raid technology and explain its features (8)
- b) Discuss about primary file storage system (8)
2. Explain static and dynamic Hashing Techniques? (16)

3. Briefly describe about B+ tree index file structure. (16)
4. What are the steps involved in Query processing? How would you estimate the cost of query. (16)
5. Discuss selection operation techniques (16)
6. Explain structure of file indices (16)
7. Explain different properties of indexes in detail (16)

UNIT IV

TRANSACTION MANAGEMENT

PART-A (2 Marks)

1. Define Transaction.
2. How many states are in Transaction system?
3. Define Centralized DBMS.
4. What is a collaborating server?
5. Horizontal Fragmentation vs Vertical Fragmentation?
6. Difference between Homogeneous and Heterogeneous ?
7. How the data is distributed across sites?
8. What is meant by Synchronous and Asynchronous replication?
9. Explain three solutions of Distributed Deadlock detection? How?
10. What is meant by peer-peer communication.

PART-B

1. a) How Transactions are possible in Distributed database? Explain briefly (8)
b) what is Transaction state and its ACID properties? (8)
2. a) Discuss about two phase locking and commit protocol (8)
b) Explain various recovery technique during transaction in detail. (8)
3. a) How can we achieve concurrency control achieved in DBMS through serializability? (8)
b) Explain Recovery schemas in detail (8)
4. a) What is deadlock prevention and dead lock detection method (10)
b) Explain the deadlock recovery technique (6)
5. Explain the following protocols for concurrency control
i) Lock based protocols (8)
ii) Time stamp based protocols (8)

6. what is concurrency control? how is it implemented in DBMS? (16)
7. a. Write short notes on shadow paging (8)
- b. Explain the deffered and immediate-modification version of the log-based recovery scheme (8)

UNIT V

CURRENT TRENDS

PART- A (2 Marks)

1. Define complex data types in OODBMS?
2. Give four examples for middle tier?
3. Abbrevation for HTTP? Examples.
4. What about presentation layers in web database?
5. Give structure of URL?
6. what is XML?Give confluence.
7. What is XML DTD?
8. How XML and HTML differs?
9. How Xpath followed in Xquery?
- 10.What about FLWOR?

PART-B

1. a. Explain the structure of XML with suitable example (8)
- b. Explain the following
 - i) Xpath (2)
 - ii) XSLT (4)
 - iii) Xquery. (2)
2. Explain the architecture of data warehousing techniques (16)
3. what are the types of knowledge discovered during data mining with example (16)
4. Highlight the features of object oriented databases (16)
5. a. Explain distributed databases and their types. (8)
- b. Explain the distributed data storage methods. (8)