



KINGS



COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK

Sub. Code & Name: CS1254 Database Management Systems
Year/Sem : II/IV

UNIT-I INTRODUCTION PART-A (2 MARKS)

1. What is DBMS?
2. Mention some Disadvantage in File Processing System.
3. Describe the three levels of data abstraction.
4. List any eight applications of DBMS.
5. Define the terms.
 - a. Physical schema
 - b. Logical schema.
6. What is conceptual schema?
7. What is a data dictionary?
8. What is Data Model?
9. What is E-R model?
10. What is an Entity?
11. What is Weak Entity set and strong entity set?
12. What is an attribute?
13. What are stored and derived attributes, and composite attributes?
14. Define E-R diagram.
15. What is DDL (Data Definition Language)?
16. What is DML (Data Manipulation Language)?
17. What are a candidate key, primary key, and foreign key?
18. Define query language.

PART-B

1. Explain DBMS System Architecture. (16)
2. Explain E-R Model in detail with suitable example. (16)
3. Explain about various data models. (16)
4. Draw an E – R Diagram for Banking, University, Company, Airlines, ATM, Hospital, Library, Super market, Insurance Company. (16)
5. Explain in details about the various database languages. (16)
- 6 a) Discuss about various operations in Relational Databases. (08)
b) Discuss about database users and administrators. (08)

UNIT-II
RELATIONAL MODEL
PART-A (2 MARKS)

1. What are the parts of SQL language?
2. What are the categories of SQL command?
3. Give the general form of SQL query?
4. What is the use of rename operation?
5. List the string operations supported by SQL.
6. List the set operations of SQL.
7. What are aggregate functions? And list the aggregate functions supported by SQL?
8. What is the use of group by clause?
9. What is the use of sub queries?
10. What is view in SQL?
11. What is trigger?
12. What is integrity?

PART-B

1. Discuss about various operations in Relational algebra (Fundamental operations – Additional operations). (16)
2. Discuss in detail about an Integrity, Triggers and Security. (16)
3. a) Explain Embedded and Dynamic SQL. (08)
b) Explain String Operations and Aggregate functions used in SQL. (08)
4. a) Explain detail in domain relational calculus. (08)
b) Explain detail in Tuple relational calculus. (08)
5. Explain detail in distributed databases and client/server databases. (16)

UNIT-III
DATABASE DESIGN
PART-A (2 MARKS)

1. What are the functional dependencies?
2. Define decomposition.
3. What is BCNF?
4. Difference between first normal form and second normal form.
5. What is dependency-preserving decomposition?
6. What are the join dependencies?
7. Define equality generating dependencies.
8. Define 4NF decomposition Algorithm.
9. Define union rule.
10. Define decomposition rule.
11. Define pseudotransitivity rule.
12. Define axioms.
13. Define reflexivity rule.
14. Define augmentation rule.
15. Define transitivity rule.

16. Define normalization.

PART-B (16 MARKS)

1. Explain detail about Functional Dependencies. (16)
2. Explain detail about first, second and third normalization form. (16)
3. Explain detail about Boyce code normal form and fifth normalization form. (16)
4. Explain detail in decomposition using Functional Dependencies. (16)
5. Explain detail in decomposition using Multi-Valued Dependencies. (16)

UNIT-IV
TRANSACTION PROCESSING
PART-A (2 MARKS)

1. What is transaction?
2. What are the properties of transaction?
3. What is recovery management component?
4. When is a transaction rolled back?
5. What are the states of transaction?
6. What is a shadow copy scheme?
7. Give the reasons for allowing concurrency.
8. What are the two types of serializability?
9. Define lock.
10. Define the phases of two phase locking protocol.
11. Define upgrade and downgrade.
12. What is a recovery scheme?
13. Define ACID property.
14. What is the use of locking?
15. What is shared lock and Exclusive lock?
16. What is meant by transaction rollback?
17. Define Query optimization.

PART-B

1. Define Serializability. Explain the types of serializability with example. (16)
2. Explain Deadlock with example. (16)
3. Explain in detail about Locking Protocol. (16)
4. a) Explain the Need for Concurrency Control. (08)
b) Discuss about transaction recoverability. (08)
5. Explain Recovery isolation levels with example. (16)
6. Explain in detail about ACID properties. (16)

UNIT-V
IMPLEMENTATION TECHNIQUES
PART-A (2 MARKS)

1. What is an index?
2. Define query optimization.
4. What are the types of storage devices?
5. Define access time.
6. Define seek time.
7. Define average seek time.
8. Define rotational latency time.
9. Define average latency time.
10. What is the use of RAID?
11. What is called mirroring?
12. What is called bit-level striping, block-level striping?
13. What is meant by software and hardware RAID systems?
14. What is known as heap file organization?
15. What is known as sequential file organization?
16. What is hashing file organization?
17. What is known as clustering file organization?
18. What are the types of indices?
19. What is known as a search key?
20. What is a primary index?
21. What are called index-sequential files?
22. What are the two types of indices?
23. What is B-Tree, B+-Tree index?
24. What is a hash index?
25. What is called query processing, query optimization?

PART-B

1. Explain various hashing techniques. (16)
2. Explain RAID. (16)
3. Explain the steps in Query processing. (16)
4. Explain B+ Tree and B-tree. (16)
5. a) Explain the types of File Organization. (08)
b) Explain some basic algorithms used in selection operation, Sorting and Join operation. (08)
6. Explain physical storage media with example. (16)