Q1. What is DBMS?

Q2. What is Database?

Q3. Mention the issues with traditional file-based systems that make DBMS a better choice?

Q4. Explain a few advantages of a DBMS.

Q5. Explain different languages present in DBMS.

Q6. What is meant by ACID properties in DBMS?

Q7. Are NULL values in a database the same as that of blank space or zero?

Q8. What are super, primary, candidate, and foreign keys?

Q9. What is the difference between primary key and unique constraints?

Q10. What is meant by DBMS and what is its utility? Explain RDBMS with examples.

Q11. What is a checkpoint in DBMS?

Q12. What is a database system?

Q13. What do you mean by Data Model?

Q14. When does checkpoint occur in DBMS?

Q15. What is the difference between an entity and an attribute?

Q16. What are the various kinds of interactions catered by DBMS?

Q17. What do you understand by query optimization?

Q18. Do we consider NULL values the same as that of blank space or zero?

Q19. What do you understand by aggregation and atomicity?

Q20. What are the different levels of abstraction in the DBMS?

Q21. What is an entity-relationship model?

Q22. What do you understand by the terms Entity, Entity Type, and Entity Set in DBMS?

Q23. What do you mean by transparent DBMS?

Q24. What are the unary operations in Relational Algebra?

Q25. What is RDBMS?

Q26. What are the differnt data models?

Q27. Define a Relation Schema and a Relation.

Q28. What is Degree of relation?

Q29. What is Relationship?

Q30. What are the disadvantages of file processing systems?

Q80 Explain the concept of database views and their advantages.

Q81 Discuss the concept of database backups and recovery strategies.

Q82 Define a database schema.

Q83 Explain ACID properties briefly.

Q84 What are data redundancy?

Q85 Define database normalization briefly.

Q86 What is a transaction log?

Q87 Explain database indexing briefly.

Q88 What are database triggers?

Q89 Define database backups.

Q90 What is a DBMS?

Q91 Explain primary keys.

Q92 How does a Database Management System (DBMS) handle data integrity constraints, such as primary keys, foreign keys, and check constraints, to ensure data accuracy and consistency in a relational database?

Q93 Explain the concept of transaction isolation levels in a DBMS, including Read Uncommitted, Read Committed, Repeatable Read, and Serializable, and discuss their impact on data concurrency and consistency.

Q94 What are the different types of join operations available in a DBMS, such as INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL JOIN, and how do they help in combining data from multiple tables based on specified criteria?

Q95 Discuss the role of database indexes in a DBMS and the factors to consider when selecting an appropriate indexing strategy, including index types (B-tree, hash, bitmap) and index cardinality.

Q96 Explain the process of query optimization in a DBMS, including steps like query parsing, query rewriting, query transformation, and cost-based optimization, and how it improves query performance.

Q97 How does a DBMS handle data concurrency and manage resource contention in a multi-user environment, utilizing techniques like locking, latching, and timestamp-based concurrency control?

Q98 Discuss the advantages and disadvantages of different database storage models, such as file-based storage, page-based storage, and tablespace-based storage, in terms of data access efficiency, scalability, and fault tolerance.

Q99 Explain the concept of database normalization and its different normal forms (1NF, 2NF, 3NF, BCNF), highlighting the benefits of achieving a well-normalized database schema in terms of data redundancy reduction and data consistency.

Q100 What are the various backup and recovery strategies implemented by a DBMS, including full backups, incremental backups, differential backups, and point-in-time recovery, and how do they ensure data availability and data loss prevention?

Q58 What are the benefits of using materialized views in a database?

Q59 Explain the role of triggers in enforcing data integrity constraints.

Q60 Discuss the significance of database locking for concurrency control.

Q61 What are the ACID properties and how do they ensure transactional consistency?

Q62 Explain normalization in database design with a brief example.

Q63 What are primary and foreign keys in a database?

Q64 Define SQL and its purpose in managing databases.

Q65 What is a transaction log and how does it ensure durability?

Q66 Discuss database indexing and its impact on query performance.

Q67 Explain the role of a database administrator (DBA) briefly.

Q68 What is database denormalization and when is it useful?

Q69 Discuss database replication and its benefits in data management.

Q70 Explain database locking and its significance in concurrent access.

Q71 Define ACID properties and their importance in database transactions.

Q72 What is the purpose of a data dictionary in a DBMS?

Q73 Discuss the concept of database normalization and its different forms.

Q74 Explain the role of indexes in a database and their types.

Q75 What are triggers in a database and how do they work?

Q76 Define database mirroring and its use in high availability.

Q77 Explain database partitioning and its benefits in performance optimization.

Q78 Discuss the differences between OLTP and OLAP databases.

Q79 What is the purpose of a transaction log in a DBMS?

Q101 Discuss the role of database views in a DBMS and their significance in providing a logical abstraction of data, simplifying complex queries, and enforcing data security by restricting access to sensitive information.

Q102 Explain the concept of database replication in a DBMS and its application in achieving data redundancy, load balancing, and fault tolerance, considering techniques like master-slave replication and multi-master replication.

Q103 How does a DBMS handle data integrity in the presence of concurrent transactions and what mechanisms are used for transaction management, including locking, logging, and undo/redo operations?

Q104 Discuss the differences between a physical and a logical database design in a DBMS, emphasizing the importance of a well-designed database schema in terms of data efficiency, data integrity, and ease of maintenance.

Q105 What are the various security measures implemented by a DBMS to protect sensitive data, including access control mechanisms, authentication, authorization, encryption, and auditing? How does it ensure data privacy and prevent unauthorized access?

Q106 Explain the concept of database triggers in a DBMS and their use in automating specific actions or enforcing business rules based on predefined conditions, such as before or after data modification operations (INSERT, UPDATE, DELETE).

Q107 How does a DBMS handle query optimization and execution plans, including techniques like cost-based optimization, query parsing, query rewriting, plan generation, and plan caching? How does it ensure efficient query processing?

Q108 Discuss the concept of database metadata in a DBMS, including the information stored in system catalog tables, such as table and column definitions, indexes, constraints, and statistics, and its role in managing and understanding the database structure.