# Database 2

**Multiple Choice Questions Based on Database Problems**

**Data Redundancy and Inconsistency**

1. Which of the following is a potential consequence of data redundancy in a database?
    - A. Improved data integrity
    - B. Increased storage requirements
    - C. Enhanced data accessibility
    - D. Reduced data inconsistency
2. What is the best way to eliminate data redundancy in a database?
    - A. Creating multiple copies of the data
    - B. Using a data warehouse
    - C. Normalizing the database
    - D. Deleting unnecessary data

**Difficulty in Accessing Data**

3. Why is it difficult to access data stored in multiple files and formats?
    - A. It requires specialized software for each format
    - B. It is time-consuming to convert data between formats
    - C. It can lead to data inconsistencies
    - D. All of the above
4. How can a database management system (DBMS) help address the challenge of data accessibility?
    - A. By providing a centralized repository for data
    - B. By enforcing data integrity constraints
    - C. By allowing concurrent access by multiple users
    - D. By providing security features to protect data

**Data Isolation**

5. What is the main disadvantage of storing data in multiple files and formats?
    - A. Increased storage requirements
    - B. Difficulty in accessing data
    - C. Reduced data integrity
    - D. All of the above

6. How can data isolation be overcome in a database system?
    - A. By using a data warehouse
    - B. By normalizing the database
    - C. By creating a data mart
    - D. By integrating data from different sources

**Integrity Problems**

7. Which of the following is an example of an integrity constraint in a database?
    - A. A foreign key constraint
    - B. A unique constraint
    - C. A check constraint
    - D. All of the above
8. Why is it difficult to add new constraints or change existing ones in a database?
    - A. It requires modifying the database schema
    - B. It can impact data integrity
    - C. It can affect database performance
    - D. All of the above

**Atomicity of Updates**

9. What is the importance of atomicity in database transactions?
    - A. It ensures that transactions are executed in isolation
    - B. It guarantees that transactions are either fully completed or not executed at all
    - C. It prevents concurrent access conflicts
    - D. It enforces data integrity constraints
10. How can atomicity be ensured in a database system?

- A. By using a transaction log
- B. By implementing a recovery mechanism
- C. By using a two-phase commit protocol
- D. All of the above

**Concurrent Access by Multiple Users**

11. What is the main challenge associated with concurrent access to a database by multiple users?

- A. Reduced database performance

- B. Increased storage requirements
- C. Data inconsistency
- D. Security problems

12. How can concurrent access conflicts be prevented in a database system?

- A. By using a locking mechanism
- B. By implementing a timestamping mechanism
- C. By using optimistic concurrency control
- D. All of the above

**Security Problems**

13. Which of the following is a security risk associated with granting users access to some but not all data in a database?

- A. Data leakage
- B. Unauthorized access
- C. Data corruption
- D. All of the above

14. How can security be ensured in a database system?

- A. By implementing access controls
- B. By encrypting data
- C. By using strong passwords
- D. All of the above


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