1. Which of the following is NOT a property of a transaction in DBMS?
   1. Atomicity
   2. **Consistency**
   3. Durability
   4. Isolation
2. Which isolation level allows the highest concurrency but may result in non-repeatable reads?
   1. **Read Uncommitted**
   2. Read Committed
   3. Repeatable Read
   4. Serializable
3. A dirty read can occur under which isolation level?
   1. **Read Uncommitted**
   2. Read Committed
   3. Repeatable Read
   4. Serializable
4. Which of the following is NOT a concurrency control technique?
   1. Locking
   2. Timestamp ordering
   3. Two-phase locking
   4. **Dirty reading**
5. Which of the following is an advantage of optimistic concurrency control?
   1. **Low overhead**
   2. Strong consistency
   3. Deadlock prevention
   4. Serializable execution
6. Which concurrency control technique allows conflicts to be detected and resolved only at the commit time?
   1. Locking
   2. Timestamp ordering
   3. Two-phase locking
   4. **Validation-based protocol**
7. In two-phase locking, a transaction holds locks in which two phases?
   1. **Growing phase and shrinking phase**
   2. Read phase and write phase
   3. Shared phase and exclusive phase
   4. Lock phase and unlock phase
8. Which of the following is NOT a benefit of using transactions?
   1. Data integrity
   2. **High availability**
   3. Data consistency
   4. Data durability
9. Which of the following is NOT a component of a transaction?
   1. Begin
   2. End
   3. **Execute**
   4. Rollback
10. Which of the following describes the ACID properties of transactions?
    1. **Atomicity, Consistency, Isolation, Durability**
    2. Availability, Consistency, Integrity, Durability
    3. Atomicity, Compatibility, Isolation, Durability
    4. Availability, Consistency, Isolation, Dependability
11. A transaction that violates the consistency property is considered to be:
    1. Serializable
    2. Dirty
    3. **Inconsistent**
    4. Isolated
12. Which isolation level allows only committed data to be read?
    1. Read Uncommitted
    2. **Read Committed**
    3. Repeatable Read
    4. Serializable
13. In timestamp ordering, which of the following determines the order of transactions?
    1. Transaction priority
    2. Transaction size
    3. **Transaction timestamp**
    4. Transaction duration
14. Which of the following is an example of a conflict serializable schedule?
    1. **S1: r1(A), w1(B), r2(A), w2(B)**

**S2: r1(B), w1(A), r2(B), w2(A)**

* 1. S1: r1(A), w1(A), r2(B), w2(B)

S2: r1(B), w1(B), r2(A), w2(A)

* 1. S1: r1(A), w1(B), r2(B), w2(A)

S2: r1(B), w1(A), r2(A), w2(B)

* 1. S1: r1(A), w1(B), r2(B), w2(A)

S2: r1(A), w1(B), r2(B), w2(A)

1. Which of the following is a property of a Serializable schedule?
   1. Recoverability
   2. **Cascadeless**
   3. Starvation-free
   4. Deadlock-free
2. Which of the following is an example of a schedule that is not recoverable?
   1. S: r1(A), w1(B), r2(A), w2(B)
   2. **S: r1(A), r2(A), w2(B), w1(B)**
   3. S: r1(A), w1(B), w2(A), r2(B)
   4. S: r1(A), w1(B), r2(A), r2(B)
3. Which of the following is NOT a type of lock used in concurrency control?
   1. Shared lock
   2. Exclusive lock
   3. **Update lock**
   4. Read lock
4. In a two-phase locking protocol, when are locks released?
   1. After the transaction is committed
   2. After the transaction is aborted
   3. In the growing phase
   4. **In the shrinking phase**
5. Which of the following is NOT a benefit of using locking for concurrency control?
   1. Deadlock prevention
   2. Data consistency
   3. Serializable execution
   4. **High performance**
6. Which of the following is an example of a non-repeatable read?
   1. Transaction T1 reads a value X, then transaction T2 updates X, and T1 reads X again.
   2. Transaction T1 reads a value X, then transaction T2 reads X, and T1 reads X again.
   3. **Transaction T1 reads a value X, then transaction T2 updates X, and T1 reads a different value Y.**
   4. Transaction T1 reads a value X, then transaction T2 reads X, and T1 reads a different value Y.
7. The "write skew" anomaly is associated with which isolation level?
   1. Read Uncommitted
   2. Read Committed
   3. Repeatable Read
   4. **Serializable**
8. Which of the following is NOT a property of a database transaction?
   1. Consistency
   2. Atomicity
   3. **Concurrency**
   4. Durability
9. Which concurrency control technique uses timestamps to order transactions?
   1. **Timestamp ordering**
   2. Locking
   3. Two-phase locking
   4. Validation-based protocol
10. In a serializable schedule, which of the following is true?
    1. **The schedule is conflict-serializable.**
    2. The schedule is deadlock-free.
    3. The schedule allows dirty reads.
    4. The schedule allows non-repeatable reads.
11. The ANSI/ISO standard SQL isolation level that provides the highest level of data consistency and isolation is:
    1. READ UNCOMMITTED
    2. READ COMMITTED
    3. REPEATABLE READ
    4. **SERIALIZABLE**
12. The concurrent execution of the database in a \_\_\_\_-user system refers to the fact that multiple users are able to access and use it at the same time.
13. Single
14. Two
15. Three
16. **Multiple**
17. When dealing with database transactions, there is often a need for multiple users to use a database to perform different operations. In this case, \_\_\_ of the database occurs.
18. Concurrent Connection
19. Concurrent Reduction
20. **Concurrent Execution**
21. Concurrent Revolution
22. Which of the following is a concurrency problem?
23. Temporary Update Problem
24. Incorrect Summary Problem
25. Lost Update Problem
26. **All of the above**
27. When one transaction updates a database item, and somehow the transaction fails, and the data doesn't get \_\_\_ back, another transaction tries to access the updated database item.
28. **Rolled**
29. Committed
30. Aborted
31. None
32. Which of the following is a concurrency control protocol?
33. Lock Based Concurrency Control Protocol
34. Timestamp Concurrency Control Protocol
35. Validation Based Concurrency Control Protocol
36. **All of the above**