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Question 1

Not yet answered

Marked out of 1.00

Which of the following is TRUE about Boyce–Codd Normal Form (BCNF)?

- ☐ a. BCNF allows transitive dependencies
- ☐ b. BCNF removes partial dependencies only
- ☐ c. Every BCNF relation is in 3NF
- ☐ d. Every 3NF relation is in BCNF

Question 2

Not yet answered

Marked out of 1.00

A relation $R(A, B, C, D)$ has functional dependencies $A \rightarrow B$, $B \rightarrow C$, $C \rightarrow D$. What is the key of R ?

- ☐ a. A
- ☐ b. B
- ☐ c. A, B, C
- ☐ d. A and B

Question 3

Not yet answered

Marked out of 1.00

In SQL, which operator is used for pattern matching other than LIKE?

- ☐ a. REGEX
- ☐ b. MATCHES
- ☐ c. SIMILAR TO
- ☐ d. PATTERN

Question 4

Not yet answered

Marked out of 1.00

Which schedule avoids cascading rollback?

- ☐ a. Recoverable schedule
- ☐ b. View-serializable schedule
- ☐ c. Strict schedule
- ☐ d. Conflict serializable schedule

Question 5

Not yet answered

Marked out of 1.00

For query optimization, cost is MOSTLY measured by:

- ☐ a. Network latency
- ☐ b. CPU time
- ☐ c. Memory usage
- ☐ d. Disk I/O operations

Question 6

Not yet answered

Marked out of 1.00

When does a deadlock occur in DBMS?

- ☐ a. Multiple users querying same table
- ☐ b. High lock granularity
- ☐ c. Transactions wait for each other cyclically
- ☐ d. Multiple updates on a record

Question 7

Not yet answered

Marked out of 1.00

In SQL, the keyword used to remove duplicate rows is:

- ☐ a. REMOVE
- ☐ b. DISTINCT
- ☐ c. DEDUP
- ☐ d. UNIQUE

Question 8

Not yet answered

Marked out of 1.00

In ER diagrams, weak entities must have:

- ☐ a. Partial key + identifying relationship
- ☐ b. A multi-valued attribute
- ☐ c. A composite key
- ☐ d. A foreign key only

Question 9

Not yet answered

Marked out of 1.00

Which index type is MOST suitable for range queries?

- ☐ a. B+ Tree Index
- ☐ b. Dense Index
- ☐ c. Bitmap Index
- ☐ d. Hash Index

Question 10

Not yet answered

Marked out of 1.00

Which isolation level prevents dirty reads but allows non-repeatable reads?

- ☐ a. READ COMMITTED
- ☐ b. REPEATABLE READ
- ☐ c. SERIALIZABLE
- ☐ d. READ UNCOMMITTED

Question 11

Not yet answered

Marked out of 1.00

A view created using other views is called:

- ☐ a. Complex View
- ☐ b. Derived View
- ☐ c. Chained View
- ☐ d. Nested View

Question 12

Not yet answered

Marked out of 1.00

Which protocol guarantees serializability but may cause deadlocks?

- ☐ a. Basic 2-Phase Locking
- ☐ b. Validation-based concurrency
- ☐ c. Optimistic protocol
- ☐ d. Timestamp ordering

Question 13

Not yet answered

Marked out of 1.00

Which of the following operations in Relational Algebra is NOT a basic operation?

- ☐ a. Set Union
- ☐ b. Selection
- ☐ c. Projection
- ☐ d. Natural Join

Question 14

Not yet answered

Marked out of 1.00

Which of the following ensures freedom from deadlocks?

- ☐ a. Time-stamp ordering
- ☐ b. Wait-die scheme
- ☐ c. Conservative 2PL
- ☐ d. 2-Phase Locking (2PL)

Question 15

Not yet answered

Marked out of 1.00

Which of the following is NOT a property of a transaction schedule?

- ☐ a. Cascadeless
- ☐ b. Conflict Serializability
- ☐ c. Recoverability
- ☐ d. Starvation

Question 16

Not yet answered

Marked out of 1.00

The ACID property ensuring that a transaction's effects are permanent is:

- ☐ a. Isolation
- ☐ b. Durability
- ☐ c. Consistency
- ☐ d. Atomicity

Question 17

Not yet answered

Marked out of 1.00

In hashing, collisions cannot be avoided due to:

- ☐ a. Limited hash functions
- ☐ b. Pigeonhole principle
- ☐ c. Bucket overflow
- ☐ d. Poor partitioning

Question 18

Not yet answered

Marked out of 1.00

Which of these is a method of join optimization?

- ☐ a. Sort-Merge Join
- ☐ b. Selective Join
- ☐ c. Enumerated Join
- ☐ d. Priority Join

Question 19

Not yet answered

Marked out of 1.00

A table with 1 million rows is queried frequently on a boolean column. Best index type?

- ☐ a. B+ Tree
- ☐ b. Hash Index
- ☐ c. Clustered Index
- ☐ d. Bitmap Index

Question 20

Not yet answered

Marked out of 1.00

What is the purpose of a CHECKPOINT in DBMS?

- ☐ a. Reduce locking
- ☐ b. Limit deadlocks
- ☐ c. Reduce recovery time
- ☐ d. Speed up disk writing

Question 21

Not yet answered

Marked out of 1.00

A trigger that executes BEFORE an insert operation is classified as:

- ☐ a. PRIOR Trigger
- ☐ b. Constraint Trigger
- ☐ c. Pre-action Trigger
- ☐ d. BEFORE Trigger

Question 22

Not yet answered

Marked out of 1.00

What does a dense index store?

- ☐ a. Index entries for primary keys only
- ☐ b. Index entries for every search key
- ☐ c. Index entries only for blocks
- ☐ d. Index entries only for non-null values

Question 23

Not yet answered

Marked out of 1.00

The FOREIGN KEY constraint ensures:

- ☐ a. Entity integrity
- ☐ b. Referential integrity
- ☐ c. Domain integrity
- ☐ d. Functional integrity

Question 24

Not yet answered

Marked out of 1.00

Which JOIN returns unmatched rows of the left table?

- ☐ a. INNER JOIN
- ☐ b. FULL JOIN
- ☐ c. LEFT JOIN
- ☐ d. RIGHT JOIN

Question 25

Not yet answered

Marked out of 1.00

A schedule is said to be conflict serializable if:

- ☐ a. It prevents deadlocks
- ☐ b. It ensures recoverability
- ☐ c. It can be converted to a serial schedule by swapping non-conflicting operations
- ☐ d. It has no conflicting operations

Question 26

Not yet answered

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SQL query to return 3rd highest salary is typically written using:

- ☐ a. LIMIT with OFFSET
- ☐ b. MIN() function
- ☐ c. HAVING clause
- ☐ d. GROUP BY

Question 27

Not yet answered

Marked out of 1.00

In distributed databases, fragmentation transparency means:

- ☐ a. Users must know fragment location
- ☐ b. Only vertical fragmentation is supported
- ☐ c. Users can control fragmentation
- ☐ d. Users do not need to know how data is split

Question 28

Not yet answered

Marked out of 1.00

A relation with multivalued dependencies is normalized using:

- ☐ a. 4NF
- ☐ b. 2NF
- ☐ c. 3NF
- ☐ d. BCNF

Question 29

Not yet answered

Marked out of 1.00

What is the worst case time complexity of searching in a B+ tree of order m?

- ☐ a. $O(N/m)$
- ☐ b. $O(\log N)$
- ☐ c. $O(m)$
- ☐ d. $O(\log m N)$

Question 30

Not yet answered

Marked out of 1.00

Phantom reads occur under which condition?

- ☐ a. A transaction updates rows while another reads them
- ☐ b. A transaction reads newly inserted rows during re-execution
- ☐ c. A transaction reads uncommitted data
- ☐ d. A transaction reads the same row twice and gets different values