Started on	Wednesday, 27 November 2024, 4:59 PM
State	Finished
Completed on	Wednesday, 27 November 2024, 5:15 PM
Time taken	15 mins 39 secs
Marks	30.00/30.00
Grade	**10.00** out of 10.00 (**100**%)

Question **1**

Correct

Mark 1.00 out of 1.00

In database recovery, what does "forward recovery" involve?

Select one:

- a. Applying committed transactions after a system crash to bring the database back to the point of failure. ✔
- b. Undoing uncommitted transactions after a system crash.
- c. Rolling back the database to a previous stable state.
- d. Backing up the entire database to an external storage.

The correct answer is: Applying committed transactions after a system crash to bring the database back to the point of failure.

Question **2**

Correct

Mark 1.00 out of 1.00

What are the ACID properties of a transaction?

Select one:

- a. Atomicity, Consistency, Integrity, Durability
- b. Atomicity, Consistency, Isolation, Durability
- c. Atomicity, Consistency, Isolation, Durability ✔
- d. Availability, Consistency, Integrity, Durability

The correct answer is: Atomicity, Consistency, Isolation, Durability

Question **3**

Correct

Mark 1.00 out of 1.00

What does the "replication" strategy in a distributed database refer to?

Select one:

- a. Copying data across multiple nodes to increase availability and fault tolerance. ✔
- b. Dividing data into fragments and storing them at different locations.
- c. Storing data at a central location and accessing it remotely.
- d. Backing up data to a local disk for recovery purposes.

The correct answer is: Copying data across multiple nodes to increase availability and fault tolerance.

Question **4**

Correct

Mark 1.00 out of 1.00

What does the term "CAP Theorem" refer to in distributed databases?

Select one:

- a. The trade-off between Consistency, Availability, and Partition tolerance in distributed systems. ✔
- b. The ability of a database to scale horizontally.
- c. The number of nodes required in a distributed system.
- d. The consistency model used by distributed databases.

The correct answer is: The trade-off between Consistency, Availability, and Partition tolerance in distributed systems.

Question **5**

Correct

Mark 1.00 out of 1.00

What is a "dirty page" in the context of database recovery?

Select one:

- a. A page that has been modified in memory but not yet written to disk. ✔
- b. A page that has been deleted from the database.
- c. A page that is in a corrupted state due to a system failure.
- d. A page that contains only read-only data.

The correct answer is: A page that has been modified in memory but not yet written to disk.

Question **6**

Correct

Mark 1.00 out of 1.00

What is a deadlock in the context of database transactions?

Select one:

- a. A situation where two or more transactions are waiting indefinitely for resources locked by each other. ✔
- b. A situation where a transaction is unable to access its data due to network failure.
- c. A situation where all transactions are completed successfully.
- d. A situation where a transaction has to be rolled back due to an error.

The correct answer is: A situation where two or more transactions are waiting indefinitely for resources locked by each other.

Question **7**

Correct

Mark 1.00 out of 1.00

What is a distributed database?

Select one:

- a. A database that is stored on multiple computers connected over a network. ✔
- b. A database that is stored in a single location.
- c. A database that stores only read-only data.
- d. A database that uses only local storage.

The correct answer is: A database that is stored on multiple computers connected over a network.

Question **8**

Correct

Mark 1.00 out of 1.00

What is a potential disadvantage of a distributed database system?

Select one:

- a. Increased complexity in data management and coordination. ✔
- b. Increased security risks due to centralized storage.
- c. Reduced data availability.
- d. Reduced scalability.

The correct answer is: Increased complexity in data management and coordination.

Question **9**

Correct

Mark 1.00 out of 1.00

What is a transaction in database management?

Select one:

- a. It is a sequence of operations that is treated as a single unit of work. ✔
- b. It is a single SQL query executed on a database.
- c. It is the database schema.
- d. It is a log file that records all changes in a database.

The correct answer is: It is a sequence of operations that is treated as a single unit of work.

Question **10**

Correct

Mark 1.00 out of 1.00

What is recovery management in the context of database systems?

Select one:

- a. Recovery management is the process of restoring a database to a consistent state after a failure. ✔
- b. Recovery management is the process of optimizing database queries.
- c. Recovery management refers to backup management in databases.
- d. Recovery management is the process of creating replicas of data across systems.

The correct answer is: Recovery management is the process of restoring a database to a consistent state after a failure.

Question **11**

Correct

Mark 1.00 out of 1.00

What is the primary purpose of the "commit" operation in a transaction?

Select one:

- a. To make all changes made during the transaction permanent. ✔
- b. To undo all changes made during the transaction.
- c. To save the transaction to a log file.
- d. To lock the data being modified during the transaction.

The correct answer is: To make all changes made during the transaction permanent.

Question **12**

Correct

Mark 1.00 out of 1.00

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

Select one:

- a. To store only committed transactions.
- b. To record all changes made to the database during a transaction, providing a way to recover the database. ✔
- c. To store only read operations performed during a transaction.
- d. To lock all modified records for transaction isolation.

The correct answer is: To record all changes made to the database during a transaction, providing a way to recover the database.

Question **13**

Correct

Mark 1.00 out of 1.00

What is the purpose of a transaction log in recovery management?

Select one:

- a. A transaction log records all database changes and helps restore the database to its last consistent state after a failure. ✔
- b. A transaction log stores database schema changes only.
- c. A transaction log helps improve database query speed.
- d. A transaction log maintains user permissions for database access.

The correct answer is: A transaction log records all database changes and helps restore the database to its last consistent state after a failure.

Question **14**

Correct

Mark 1.00 out of 1.00

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

Select one:

- a. Read Uncommitted
- b. Serializable
- c. Read Committed ✔
- d. Repeatable Read

The correct answer is: Read Committed

Question **15**

Correct

Mark 1.00 out of 1.00

Which of the following describes "rollback" in recovery management?

Select one:

- a. Rollback undoes the changes made by a transaction that has not been committed. ✔
- b. Rollback applies the changes made by a transaction that has not been committed.
- c. Rollback commits the changes made by a transaction to permanent storage.
- d. Rollback backs up the database to a previous state.

The correct answer is: Rollback undoes the changes made by a transaction that has not been committed.

Question **16**

Correct

Mark 1.00 out of 1.00

Which of the following describes "undo" in recovery management?

Select one:

- a. Undo reverts changes made by transactions that were not committed at the time of a system crash. ✔
- b. Undo commits changes made by all transactions that were successfully completed.
- c. Undo backs up the current database state to a stable state.
- d. Undo merges two versions of the database into one consistent version.

The correct answer is: Undo reverts changes made by transactions that were not committed at the time of a system crash.

Question **17**

Correct

Mark 1.00 out of 1.00

Which of the following is a characteristic of a centralized database system?

Select one:

- a. Data is stored and managed at multiple locations.
- b. Data is stored and managed at a single central location. ✔
- c. Data is fragmented and distributed across nodes.
- d. Data is replicated across multiple databases for fault tolerance.

The correct answer is: Data is stored and managed at a single central location.

Question **18**

Correct

Mark 1.00 out of 1.00

Which of the following is a characteristic of the "Serializable" isolation level?

Select one:

- a. It ensures that transactions execute in a way that they are serializable and do not interfere with each other. ✔
- b. It allows dirty reads but prevents non-repeatable reads.
- c. It allows transactions to read uncommitted data.
- d. It prevents all types of locks during a transaction.

The correct answer is: It ensures that transactions execute in a way that they are serializable and do not interfere with each other.

Question **19**

Correct

Mark 1.00 out of 1.00

Which of the following is a common recovery technique in database management?

Select one:

- a. Log-based recovery ✔
- b. Data fragmentation
- c. Indexing
- d. Data encryption

The correct answer is: Log-based recovery

Question **20**

Correct

Mark 1.00 out of 1.00

Which of the following is a key advantage of a distributed database?

Select one:

- a. Improved fault tolerance and availability. ✔
- b. Increased data redundancy.
- c. Lower hardware costs.
- d. Centralized data storage.

The correct answer is: Improved fault tolerance and availability.

Question **21**

Correct

Mark 1.00 out of 1.00

Which of the following is a key challenge when managing a distributed database system?

Select one:

- a. Ensuring data consistency and coordination between distributed nodes. ✔
- b. Ensuring data is stored at a central location.
- c. Ensuring there is no need for data replication.
- d. Reducing the network speed for database queries.

The correct answer is: Ensuring data consistency and coordination between distributed nodes.

Question **22**

Correct

Mark 1.00 out of 1.00

Which of the following is a primary goal of recovery management in databases?

Select one:

- a. To ensure the database can recover to a consistent state after a failure. ✔
- b. To improve database query execution speed.
- c. To minimize database storage requirements.
- d. To enhance user access to database data.

The correct answer is: To ensure the database can recover to a consistent state after a failure.

Question **23**

Correct

Mark 1.00 out of 1.00

Which of the following is an example of a distributed database system?

Select one:

- a. Google Bigtable ✔
- b. MySQL
- c. SQLite
- d. Oracle DB

The correct answer is: Google Bigtable

Question **24**

Correct

Mark 1.00 out of 1.00

Which of the following is an example of a non-repeatable read problem?

Select one:

a. A transaction reads a value that another transaction changes before it is committed.

b. A transaction reads a value, and then another transaction updates that value before the first transaction reads it again. ✔

c. A transaction reads a value that is yet to be written to the database.

d. A transaction tries to update a record that is locked by another transaction.

The correct answer is: A transaction reads a value, and then another transaction updates that value before the first transaction reads it again.

Question **25**

Correct

Mark 1.00 out of 1.00

Which of the following is NOT a potential problem in transaction management?

Select one:

a. Dirty Read

b. Non-repeatable Read

c. File Corruption ✔

d. Lost Update

The correct answer is: File Corruption

Question **26**

Correct

Mark 1.00 out of 1.00

Which of the following is the main purpose of a "distributed transaction" in a distributed database?

Select one:

a. To ensure that operations on multiple nodes in the distributed database are coordinated and completed successfully. ✔

b. To divide a large database into smaller fragments.

c. To ensure data replication across all nodes.

d. To provide data backup for the database.

The correct answer is: To ensure that operations on multiple nodes in the distributed database are coordinated and completed successfully.

Question **27**

Correct

Mark 1.00 out of 1.00

Which of the following is true about the "checkpoint" process in database recovery management?

Select one:

- a. A checkpoint records the current state of the database so that recovery can start from that point in case of failure. ✔
- b. A checkpoint stores a backup copy of the entire database.
- c. A checkpoint only records completed transactions.
- d. A checkpoint is used to create database indexes.

The correct answer is: A checkpoint records the current state of the database so that recovery can start from that point in case of failure.

Question **28**

Correct

Mark 1.00 out of 1.00

Which of the following is true about transaction rollback?

Select one:

- a. Rollback undoes all changes made by the transaction, restoring the database to its previous state. ✔
- b. Rollback commits the changes made by the transaction.
- c. Rollback only undoes changes made by the most recent operation.
- d. Rollback is used to lock data during a transaction.

The correct answer is: Rollback undoes all changes made by the transaction, restoring the database to its previous state.

Question **29**

Correct

Mark 1.00 out of 1.00

Which recovery model does not allow the recovery of data to a specific point in time?

Select one:

- a. Simple recovery model ✔
- b. Full recovery model
- c. Transaction log recovery model
- d. Incremental recovery model

The correct answer is: Simple recovery model

Question **30**

Correct

Mark 1.00 out of 1.00

Which type of distributed database model involves data that is divided and stored across different locations?

Select one:

- a. Fragmented model ✔
- b. Replicated model
- c. Centralized model
- d. Hierarchical model

The correct answer is: Fragmented model

◄ Test 1 (Year: 2024)

Jump to...

QUIZ - (Year-2024) ►