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## **Introduction to DBMS and RDBMS**

**1. Which of the following is the primary purpose of a Database Management System (DBMS)?**

- a) Data Storage
- b) Data Security
- c) Data Retrieval and Manipulation
- d.) All of the above

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**2. In an RDBMS, what does the term "relation" refer to?**

- a.) A table
- b) A column
- c) A row
- d) A constraint

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**3. Which of the following is NOT a characteristic of RDBMS?**

- a) Data is stored in tables
- b) It supports SQL for querying
- c) Data is stored in a hierarchical format.
- d) It supports relationships between tables

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**4. Which of the following is a feature of DBMS?**

- a) It provides concurrent access to the database.
- b) It provides data redundancy.
- c). It enforces data integrity.
- d) It does not support data manipulation.

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**5. What is a primary key in an RDBMS?**

- a) A key that can accept duplicate values
- b) A key used to link two tables
- c) A key that uniquely identifies a record in a table.
- d) A key used to perform JOIN operations

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**6. Which of the following is NOT a type of relationship in an RDBMS?**

- a) One-to-many
- b) Many-to-many

- c) One-to-one
  - d) Many-to-one.
- 

**7. What is normalization in a relational database?**

- a) Organizing data to reduce redundancy and improve integrity..
  - b) Combining tables to minimize joins.
  - c) Reducing the size of a database.
  - d) Backing up data.
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**8. What is a foreign key in a relational database?**

- a) A key used to uniquely identify records in a table.
  - b) A key used to perform indexing operations.
  - c) A key used to link two tables
  - d) A key used for primary key indexing.
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**9. What does the acronym "ACID" stand for in DBMS?**

- a) Atomicity, Consistency, Isolation, Durability
  - b) Attribute, Column, Integrity, Data
  - c) Aggregate, Compute, Insert, Delete
  - d) None of the above
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**10. Which of the following is a disadvantage of DBMS?**

- a) It provides data security
  - b) It reduces redundancy
  - c) It increases complexity and cost
  - d) It improves data retrieval speed
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## **SQL vs NoSQL**

**11. Which of the following is true about SQL databases?**

- a) They are generally used for handling unstructured data
  - b) They use a schema-less structure
  - c) They are based on relational models
  - d) They do not support transactions
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**12. Which of the following is a characteristic of NoSQL databases?**

- a) They use structured query language (SQL)
- b) They support flexible schema designs.

- c) They are typically relational
  - d) They do not support large-scale distributed systems
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**13. Which of the following is an example of a NoSQL database?**

- a) MySQL
  - b) PostgreSQL
  - c) MongoDB
  - d) Oracle
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**14. Which of the following statements is true about NoSQL databases?**

- a) They are ideal for handling structured data
  - b) They are not suitable for handling large volumes of data
  - c) They scale horizontally rather than vertically.
  - d) They do not support consistency
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**15. Which of the following is a benefit of using SQL over NoSQL?**

- a) More flexibility in handling unstructured data..
  - b) Better suited for small-scale applications..
  - c) Well-suited for applications that require complex queries and transactions.
  - d) Scalability
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**16. Which of the following is NOT an advantage of NoSQL databases?**

- a) High scalability
  - b) Ability to handle unstructured data
  - c). Support for ACID properties
  - d) Fast write operations
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**17. What does the term "schema-less" mean in the context of NoSQL databases?**

- a) NoSQL databases do not require a database schema..
  - b) NoSQL databases require a schema but not for relationships.
  - c) NoSQL databases have rigid schema constraints.
  - d) NoSQL databases do not support any data structure.
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**18. What type of NoSQL database is MongoDB?**

- a) Key-Value Store
  - b) Document Store
  - c) Column Store
  - d) Graph Database
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**19. Which of the following is an example of a key-value NoSQL database?**

- a) MongoDB
  - b) Redis.
  - c) Cassandra
  - d) Neo4j
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**20. Which of the following is a common use case for NoSQL databases?**

- a) Banking applications requiring strong consistency
  - b.) Social media applications
  - c) Complex financial transactions
  - d) Enterprise-level relational applications
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**21. Which of the following best describes SQL databases?**

- a) Designed for horizontal scaling
  - b Use tables and support JOIN operations
  - c) Handle only unstructured data
  - d) Use a flexible schema
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**22. Which of the following is an example of a relational database management system (RDBMS)?**

- a) MongoDB.
  - b) SQLite..
  - c) Cassandra.
  - d) CouchDB.
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**23. Which of the following is a common characteristic of NoSQL databases?**

- a) They store data in tables with rows and columns
  - b) They provide strong consistency
  - c) They are optimized for complex queries
  - d) They can scale across many servers and handle unstructured data.
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**24. SQL databases are typically preferred for which of the following scenarios?**

- a) Real-time analytics
  - b) Applications with large, unstructured datasets
  - c) Complex queries and data relationships
  - d) High-velocity write operations
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**25. Which of the following is a typical feature of NoSQL databases?**

- a) Predefined schema
  - b) Transactional support
  - c) Horizontal scaling..
  - d) Rigorous consistency
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**26. Which of the following is the main purpose of SQL in an RDBMS?**

- a) To store data
  - b) To query, update, and manage data
  - c) To provide a user interface
  - d) To create relationships between tables
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**27. Which of the following is NOT a component of SQL?**

- a) Data Definition Language (DDL)
  - b) Data Manipulation Language (DML)
  - c) Data Display Language (DDL)
  - d) Data Control Language (DCL)
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**28. What does the term "data integrity" refer to in the context of DBMS?**

- a) The ability to recover data after a crash
  - b) The correctness and consistency of data in the database
  - c) The process of inserting data into the database
  - d) The speed of data retrieval from the database
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**29. In an RDBMS, what does a "normal form" refer to?**

- a) A method to store data
- b) A way to optimize SQL queries

- c) A. set of rules to reduce data redundancy.
  - d) A format for displaying data
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**30. Which of the following is a benefit of using SQL databases?**

- a) Horizontal scalability
  - b) Easy handling of unstructured data
  - c) Strong consistency and ACID compliance
  - d) Schema-less design
- 

**31. Which of the following is an example of an SQL operation?**

- a) SELECT
  - b) INSERT
  - c) DELETE
  - d) All of the above
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**32. Which of the following is NOT a type of SQL join?**

- a) INNER JOIN
  - b) LEFT JOIN
  - c) RIGHT JOIN
  - d) COLUMN JOIN
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**33. Which of the following is true about NoSQL databases?**

- a) They typically store data in a structured format with a fixed schema
  - b) They are best suited for applications with high read-to-write ratios
  - c) They provide strong support for complex queries
  - d) They offer high scalability and flexibility in handling unstructured data
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**34. Which type of NoSQL database stores data in key-value pairs?**

- a) Document-based NoSQL
  - b) Column-family NoSQL
  - c) Key-value NoSQL;
  - d) Graph-based NoSQL
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**35. Which of the following is NOT a feature of NoSQL databases?**

- a) Schema flexibility
- b) Horizontal scaling
- c) Complex query support with joins;
- d) High availability

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**36. Which of the following NoSQL databases is best suited for graph-based data models?**

- a) MongoDB
- b) Cassandra
- c) Neo4j
- d) Redis

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**37. What is the main advantage of using NoSQL over SQL for web applications?**

- a) NoSQL databases are typically faster for complex queries
- b) NoSQL databases provide better support for structured data
- c) NoSQL db are more suitable for handling large volumes of unstructured or semi-structured data
- d) NoSQL databases use a more complex query language

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**38. Which of the following is a feature of MongoDB, a NoSQL database?**

- a) It stores data in tables with rows and columns
- b) It uses JSON-like documents for data storage
- c) It requires a predefined schema
- d) It does not support indexing

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**39. Which of the following is NOT a common use case for NoSQL databases?**

- a) Real-time data analytics
- b) Content management systems
- c) Financial accounting system
- d) Social media platforms

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**40. What does "eventual consistency" mean in NoSQL databases?**

- a) All replicas will be consistent immediately
- b) Data consistency is guaranteed across all nodes in real-time
- c) It means data will eventually become consistent after some time
- d) Data consistency is never required

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**41. Which of the following is a disadvantage of SQL databases?**

- a) Lack of ACID compliance
- b) Inability to handle large volumes of data
- c) Limited scalability
- d) Lack of structured data support

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**42. In NoSQL, what does a "column-family" database store?**

- a) Key-value pairs
  - b) Graph data
  - c) Data in tables with rows and columns
  - d) Data in a nested JSON format
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**43. Which of the following is true about SQL and NoSQL databases?**

- a) SQL is more suitable for horizontal scaling compared to NoSQL
  - b) NoSQL is more suitable for structured data than SQL
  - c) SQL databases are generally better for transactions and consistency
  - d) NoSQL databases cannot handle complex queries
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**44. Which of the following is NOT an example of a relational database management system (RDBMS)?**

- a) MySQL
  - b) PostgreSQL
  - c) MongoDB
  - d) Oracle
- 

**45. Which of the following SQL clauses is used to filter records in a query?**

- a) SELECT
  - b) WHERE
  - c) FROM
  - d) ORDER BY
- 

**46. What is the default behavior of a SQL JOIN when there is no match between the tables being joined?**

- a) Return NULL values
  - b) Return all rows from both tables
  - c) Return no rows
  - d) Return an error
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**47. In NoSQL databases, which of the following is used to ensure data replication and fault tolerance?**

- a) Partitioning
- b) Sharding
- c) Replication
- d) Normalization



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**48. Which of the following is a major advantage of using NoSQL databases for real-time applications?**

- a) Faster transaction processing
  - b) Better ACID compliance
  - c) Better support for horizontal scalability
  - d) Stronger data integrity
- 

**49. Which of the following NoSQL databases is known for its key-value storage?**

- a) MongoDB
  - b) Cassandra
  - c) Redis
  - d) Neo4j
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**50. Which of the following is a major feature of NoSQL databases compared to SQL databases?**

- a) Strong consistency
  - b) Support for complex joins
  - c) Horizontal scalability
  - d) Rigid schema
- 

**51. Which of the following is a key characteristic of a relational database management system (RDBMS)?**

- a) Data is stored in key-value pairs
  - b) Data is stored in documents
  - c) Data is stored in tables with rows and columns
  - d) Data is stored as graphs
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**52. In SQL, what is the purpose of the GROUP BY clause?**

- a) To filter rows based on a condition
  - b) To combine rows with similar values into summary rows
  - c) To sort the result set
  - d) To join two tables
- 

**53. Which of the following is the default data type for storing strings in a relational database?**

- a) VARCHAR
- b) TEXT

- c) CHAR
  - d) STRING
- 

**54. What is the purpose of the "JOIN" operation in SQL?**

- a) To combine data from different tables based on a related column
  - b) To remove duplicate records from the result set
  - c) To sort the records in the result set
  - d) To insert data into a table
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**55. In NoSQL, what is a document-based database?**

- a) A database where data is stored in tables
  - b) A database where data is stored as JSON-like documents
  - c) A database that stores data in rows and columns
  - d) A database where data is stored as key-value pairs
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**56. What does ACID stand for in the context of relational databases?**

- a) Atomicity, Consistency, Isolation, Durability
  - b) Asynchronous, Consistent, Independent, Durable
  - c) Array, Column, Integer, Decimal
  - d) Anonymity, Consistency, Isolation, Durability
- 

**57. Which of the following is a feature of horizontal scaling in databases?**

- a) Adding more CPU power to a single server
  - b) Adding more servers to distribute the load
  - c) Increasing memory size of a single server
  - d) Reducing the data stored in the database
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**58. Which SQL statement is used to remove a table from a database?**

- a) DELETE
  - b) DROP
  - c) REMOVE
  - d) TRUNCATE
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**59. Which of the following is true about SQL transactions?**

- a) Transactions are always irreversible
- b) Transactions are used to group multiple SQL statements into one logical unit

- c) Transactions can only be used for SELECT queries
  - d) Transactions do not provide consistency
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**60. What is the purpose of the "WHERE" clause in SQL?**

- a) To sort the result set
  - b) To filter records based on a specified condition
  - c) To group records by a specified column
  - d) To join multiple tables together
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**61. What does a NoSQL database typically provide over an SQL database?**

- a) Better support for complex transactions
  - b) Horizontal scalability and flexibility for unstructured data
  - c) Structured schema for data
  - d) Rigorous adherence to ACID properties
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**62. In SQL, which of the following is used to sort the results of a query?**

- a) ORDER BY
  - b) SELECT
  - c) GROUP BY
  - d) WHERE
- .
- 

**63. What is a primary key in a relational database?**

- a) A key that ensures uniqueness and identifies each row in a table
  - b) A key that is used to link two tables
  - c) A key that allows faster query processing
  - d) A key used to update a column's values
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**64. What is sharding in NoSQL databases?**

- a) The process of compressing data to save space
  - b) Dividing data across multiple machines or databases
  - c) Storing data in a hierarchical structure
  - d) Sorting data in a specific order
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**65. Which of the following is a key advantage of using an RDBMS over a NoSQL database?**

- a) Higher scalability

- b) Support for complex queries and transactions
  - c) Flexibility with unstructured data
  - d) Faster write operations
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**66. What type of data structure does a key-value store in NoSQL databases use?**

- a) List
  - b) Graph
  - c) Table
  - d) Key-value pairs
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**67. What is the main advantage of using NoSQL databases for web-scale applications?**

- a) They use predefined schemas for data
  - b) They are vertically scalable
  - c) They can handle high-velocity, unstructured data
  - d) They support complex relational queries
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**68. Which of the following is true about SQL databases in terms of scalability?**

- a) SQL databases are better for horizontal scaling
  - b) SQL databases rely on vertical scaling to handle growth
  - c) SQL databases are less efficient for handling large-scale distributed systems
  - d) SQL databases automatically scale based on traffic load
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**69. What is the purpose of an index in an SQL database?**

- a) To speed up queries and improve performance
  - b) To group data based on specific columns
  - c) To delete redundant data
  - d) To enforce integrity constraints
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**70. Which of the following is a disadvantage of using NoSQL databases?**

- a) They do not scale well horizontally
- b) They provide fewer flexibility for schema design
- c) They lack ACID transaction support
- d) They do not support unstructured data