

A large, stylized orange question mark graphic that serves as a background for the title. It has a network-like pattern of lines and dots, and several smaller question mark icons are scattered within its shape.

# SQL Query

## Interview Questions

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1. What is the primary purpose of MySQL?

- A) To play music
- B) To manage databases
- C) To edit images
- D) To browse the internet
- Answer: B) To manage databases

2. Which SQL keyword is used to insert data into a table?

- A) UPDATE
- B) INSERT
- C) SELECT
- D) DELETE
- Answer: B) INSERT

3. What does the term "canon table" refer to in MySQL?

- A) A table with only one column
- B) A table used for system settings
- C) A misspelling of "cannon table"
- D) A table containing canonical data
- Answer: C) A misspelling of "cannon table"

4. In SQL, which clause is used to specify the values to be inserted into a table?

- A) WHERE
- B) VALUES
- C) SET
- D) INTO
- Answer: B) VALUES

5. What is the purpose of the MySQL command "INSERT INTO"?

- A) To create a new table
- B) To update existing records
- C) To insert new records into a table
- D) To delete records from a table
- Answer: C) To insert new records into a table

6. Which MySQL data type is commonly used for storing whole numbers without decimals?

- A) INT
- B) VARCHAR
- C) FLOAT
- D) DATE
- **Answer: A) INT**

7. What is the significance of the primary key in a MySQL table?

- A) It ensures unique values in a column
- B) It allows NULL values
- C) It is used for sorting data
- D) It is optional and can be omitted
- Answer: A) It ensures unique values in a column

8. Which SQL statement is used to delete records from a table?

- A) REMOVE
- B) ERASE
- C) DELETE
- D) TRUNCATE
- **Answer:** C) DELETE

9. What happens if you try to insert a record into a table without specifying a value for a NOT NULL column?

- A) The record is inserted with a default value.
- B) The insertion fails, and an error is generated.
- C) The column is automatically assigned a NULL value.
- D) The column is skipped, and the insertion continues.
- **Answer:** B) The insertion fails, and an error is generated.

10. Which SQL clause is used to filter the results of a SELECT statement?

- A) ORDER BY
- B) WHERE
- C) GROUP BY
- D) HAVING
- **Answer:** B) WHERE

11. Explain the difference between INNER JOIN and LEFT JOIN in MySQL.

- A) INNER JOIN returns only matching rows, while LEFT JOIN returns all rows from the left table and matching rows from the right table.
- B) INNER JOIN returns all rows from both tables, while LEFT JOIN returns only matching rows.
- C) INNER JOIN and LEFT JOIN are interchangeable; they have the same functionality.
- D) INNER JOIN and LEFT JOIN have no practical differences in MySQL.
- **Answer:** A) INNER JOIN returns only matching rows, while LEFT JOIN returns all rows from the left table and matching rows from the right table.

12. What is normalisation in the context of database design, and why is it important?

- A) Normalisation is the process of organising data to minimise redundancy and dependency, ensuring data integrity and efficiency.
- B) Normalisation is the process of adding redundancy to improve data storage.
- C) Normalisation is not relevant in MySQL.
- D) Normalisation is a term used to describe the speed of data retrieval in a database.
- **Answer:** A) Normalisation is the process of organising data to minimise redundancy and dependency, ensuring data integrity and efficiency.

13. How does the ACID properties ensure data integrity in a relational database like MySQL?

- A) ACID properties stand for Atomicity, Consistency, Isolation, and Durability, ensuring that database transactions are reliable even in the face of errors or system failures.
- B) ACID properties are not relevant to data integrity.
- C) ACID properties focus only on data consistency and ignore other aspects.
- D) ACID properties are specific to non-relational databases and don't apply to MySQL.
- Answer: A) ACID properties stand for Atomicity, Consistency, Isolation, and Durability, ensuring that database transactions are reliable even in the face of errors or system failures

14. Explain the concept of a foreign key in MySQL and its role in maintaining referential integrity.

- A) A foreign key is a column or a set of columns in a table that refers to the primary key of another table, establishing a link between the two tables and ensuring referential integrity.
- B) A foreign key is used to create duplicate records in different tables.
- C) A foreign key is only used for sorting data in MySQL.
- D) A foreign key is optional and has no impact on referential integrity.
- Answer: A) A foreign key is a column or a set of columns in a table that refers to the primary key of another table, establishing a link between the two tables and ensuring referential integrity.

15. Discuss the role of indexes in MySQL. Why are they important, and when should they be used?

- A) Indexes are used to improve the speed of data retrieval by providing a quick lookup mechanism, especially on large tables. They should be used when searching, sorting, or joining operations are frequent.
- B) Indexes are not relevant in MySQL.
- C) Indexes are used only for primary keys and have no impact on other columns.
- D) Indexes are used to slow down data retrieval, and their usage is discouraged in MySQL.
- Answer: A) Indexes are used to improve the speed of data retrieval by providing a quick lookup mechanism, especially on large tables. They should be used when searching, sorting, or joining operations are frequent.

16. When creating a table in MySQL, what does the AUTO\_INCREMENT attribute do for a column?

- A) Automatically increments the column value by 1 with each new insertion
- B) Sets the column value to the current timestamp
- C) Allows NULL values in the column
- D) Prevents the column from being updated
- Answer: A) Automatically increments the column value by 1 with each new insertion

17. In MySQL, what is the purpose of the GROUP BY clause?

- A) To filter records based on a specified condition
- B) To sort records in ascending order
- C) To group rows that have the same values in specified columns
- D) To join multiple tables together
- Answer: C) To group rows that have the same values in specified columns



18. Explain the difference between a stored procedure and a function in MySQL.

- A) A stored procedure can perform actions and return values, while a function is used only for calculations and always returns a value.
- B) A stored procedure and a function are interchangeable terms in MySQL.
- C) A stored procedure and a function both perform calculations but have no ability to return values.
- D) A function is used to perform actions, while a stored procedure is used only for calculations.
- Answer: A) A stored procedure can perform actions and return values, while a function is used only for calculations and always returns a value.

19. Explain the concept of indexing strategies in MySQL. Compare and contrast the advantages and disadvantages of using B-tree and Hash indexes in different scenarios.

- A) Indexing strategies are crucial for optimizing query performance. B-tree indexes excel in range queries and sorting, while Hash indexes are efficient for equality lookups. However, B-tree indexes may have a slight overhead in insert/update operations, and Hash indexes may not be suitable for range queries.
- B) Indexing strategies in MySQL are limited to B-tree, and Hash indexes have no practical application.
- C) Both B-tree and Hash indexes offer identical performance benefits, and their usage depends solely on personal preference.
- D) Indexing strategies are irrelevant in MySQL, as the query optimizer automatically handles all optimization tasks.

Answer: A) Indexing strategies are crucial for optimizing query performance. B-tree indexes excel in range queries and sorting, while Hash indexes are efficient for equality lookups. However, B-tree indexes may have a slight overhead in insert/update operations, and Hash indexes may not be suitable for range queries.

20. Discuss the role of transactions in MySQL and the importance of isolation levels. Compare the characteristics of different isolation levels (e.g., Read Uncommitted, Read Committed, Repeatable Read, Serializable) and explain when each level is appropriate.

- A) Transactions ensure the consistency and integrity of a database. Isolation levels control the visibility of uncommitted changes to other transactions. Read Uncommitted allows dirty reads, while Read Committed prevents them. Repeatable Read ensures consistent results for the duration of a transaction, and Serializable provides the highest level of isolation but may lead to increased contention and performance issues.
- B) Transactions in MySQL are limited to a single isolation level, and there are no variations or options.
- C) Isolation levels are irrelevant in MySQL, as the default level is always optimal for any scenario.
- D) Transactions are mainly used for backup and recovery purposes, and isolation levels have no impact on transactional consistency.

Answer: A) Transactions ensure the consistency and integrity of a database.

Isolation levels control the visibility of uncommitted changes to other transactions.

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Serializable provides the highest level of isolation but may lead to increased

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