Basic Level

1. **What is SQL?**
2. **What is MySQL?**
3. **What is a database?**
4. **What is a table in SQL?**
5. **How do you create a database in SQL?**
6. **How do you create a table in SQL?**
7. **How do you insert data into a table in SQL?**
8. **How do you retrieve all records from a table in SQL?**
9. **What is a primary key?**
10. **What is a foreign key?**
11. **How do you update data in a table in SQL?**
12. **How do you delete data from a table in SQL?**
13. **What is a NULL value in SQL?**
14. **What is a SQL query?**
15. **How do you use the SELECT statement in SQL?**
16. **How do you use the WHERE clause in SQL?**
17. **What are SQL constraints?**
18. **What is a SQL join?**
19. **What are the different types of joins in SQL?**
20. **How do you use the ORDER BY clause in SQL?**
21. **How do you use the GROUP BY clause in SQL?**
22. **What is the difference between HAVING and WHERE clauses in SQL?**
23. **How do you use the COUNT function in SQL?**
24. **How do you use the SUM function in SQL?**
25. **How do you use the AVG function in SQL?**
26. **How do you use the MIN and MAX functions in SQL?**
27. **How do you use the LIKE operator in SQL?**
28. **How do you use the BETWEEN operator in SQL?**
29. **How do you use the IN operator in SQL?**
30. **How do you use the DISTINCT keyword in SQL?**

Intermediate Level

1. **What is a subquery in SQL?**
2. **How do you use a subquery in the SELECT statement in SQL?**
3. **What is a correlated subquery in SQL?**
4. **How do you use the EXISTS keyword in SQL?**
5. **How do you use the CASE statement in SQL?**
6. **How do you create a view in SQL?**
7. **What are indexes in SQL?**
8. **How do you create an index in SQL?**
9. **What is a stored procedure in SQL?**
10. **How do you create a stored procedure in SQL?**
11. **What is a trigger in SQL?**
12. **How do you create a trigger in SQL?**
13. **What is a transaction in SQL?**
14. **How do you use the COMMIT and ROLLBACK statements in SQL?**
15. **How do you handle errors in SQL?**
16. **What is normalization in SQL?**
17. **What are the different normal forms in SQL?**
18. **What is denormalization in SQL?**
19. **How do you use the UNION operator in SQL?**
20. **How do you use the INTERSECT operator in SQL?**

Advanced Level

1. **How do you optimize a SQL query?**
2. **What is a CTE (Common Table Expression) in SQL?**
3. **How do you use a CTE in SQL?**
4. **What is window function in SQL?**
5. **How do you use the ROW\_NUMBER() function in SQL?**
6. **How do you use the RANK() function in SQL?**
7. **How do you use the DENSE\_RANK() function in SQL?**
8. **How do you use the NTILE() function in SQL?**
9. **How do you use the LEAD() and LAG() functions in SQL?**
10. **What is a materialized view in SQL?**
11. **How do you create a materialized view in SQL?**
12. **What is partitioning in SQL?**
13. **How do you partition a table in SQL?**
14. **How do you use the MERGE statement in SQL?**
15. **What is sharding in SQL?**
16. **How do you implement sharding in MySQL?**
17. **How do you use JSON data in MySQL?**
18. **How do you use the JSON\_EXTRACT() function in MySQL?**
19. **What is full-text search in MySQL?**
20. **How do you implement full-text search in MySQL?**
21. **What is the difference between InnoDB and MyISAM storage engines in MySQL?**
22. **How do you use foreign keys with InnoDB in MySQL?**
23. **How do you use the EXPLAIN statement to analyze a query in MySQL?**
24. **What is a replica set in MySQL?**
25. **How do you set up replication in MySQL?**
26. **What is a stored function in SQL?**
27. **How do you create a stored function in SQL?**
28. **How do you implement error handling in MySQL stored procedures?**
29. **How do you use the AUTO\_INCREMENT feature in MySQL?**
30. **How do you manage user permissions in MySQL?**

These questions should provide a well-rounded understanding of SQL and MySQL, covering fundamental concepts, practical applications, and advanced techniques.

<https://www.datacamp.com/blog/top-sql-interview-questions-and-answers-for-beginners-and-intermediate-practitioners>

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