MySQL interview questions

**🔹 Basics & Fundamentals**

1. What is a database?
2. What is MySQL? How is it different from other RDBMS?
3. What is a table in MySQL?
4. What is a primary key?
5. What is a foreign key?
6. What are constraints in MySQL?
7. What is the difference between SQL and MySQL?

**🔹 CRUD Operations (Very Important)**

1. How do you insert data into a table? (INSERT)
2. How do you fetch records from a table? (SELECT)
3. How do you update data in a table? (UPDATE)
4. How do you delete data from a table? (DELETE)

**🔹 SQL Clauses & Filtering**

1. What is the difference between WHERE and HAVING?
2. What is the GROUP BY clause?
3. What is the ORDER BY clause?
4. What does the LIMIT clause do?
5. What is the BETWEEN operator?
6. What is the LIKE operator? How is it used?

**🔹 Joins (Must-Know)**

1. What are joins? Why are they used?
2. What is an INNER JOIN?
3. What is a LEFT JOIN?
4. What is a RIGHT JOIN?
5. What is a FULL OUTER JOIN? (Even though not supported directly by MySQL, you should know the concept)
6. What is a SELF JOIN?
7. What is a CROSS JOIN?

**🔹 Table Design & Normalization**

1. What is normalization? Why is it important?
2. Explain 1NF, 2NF, 3NF with examples.
3. What is denormalization? When would you use it?

**🔹 Indexes & Performance**

1. What is an index in MySQL?
2. What are the types of indexes?
3. What is a composite index?
4. How do indexes improve performance?
5. When should you avoid using indexes?

**🔹 Aggregate Functions**

1. What are aggregate functions? (SUM, AVG, COUNT, MAX, MIN)
2. How do you count unique values?
3. How do you find the second highest salary?

**🔹 Subqueries & Nested Queries**

1. What is a subquery?
2. Difference between correlated and non-correlated subquery?
3. Can you use JOIN instead of subquery? Which is better?

**🔹 Views & Stored Elements**

1. What is a view? How do you create one?
2. What is a stored procedure?
3. What is a trigger in MySQL?
4. What is a function in SQL? How is it different from a procedure?

**🔹 Transactions & Locks**

1. What is a transaction?
2. What are ACID properties?
3. What is COMMIT and ROLLBACK?
4. What is a savepoint?
5. What is a lock? Types of locks in MySQL?

**🔹 Data Types**

1. What are the different data types in MySQL?
2. What is the difference between CHAR and VARCHAR?
3. What is the difference between DATE, DATETIME, and TIMESTAMP?

**🔹 Advanced Queries**

1. What is a UNION and UNION ALL?
2. How do you fetch duplicate records?
3. How do you delete duplicate rows?
4. How do you find records that exist in one table but not in another?
5. How do you write a query to get nth highest salary?

**🔹 Other Key Questions**

1. Difference between NULL and empty string?
2. What is the use of AUTO\_INCREMENT?
3. What is the difference between NOW() and CURDATE()?
4. What is the difference between TRUNCATE and DELETE?
5. What are temporary tables? How are they used?