SQL Question Bank

DDL (Data Definition Language)
What is DDL, and how does it differ from DML and DQL?
Can you explain the following DDL commands: CREATE, ALTER, DROP, TRUNCATE?
What is the difference between the DROP and TRUNCATE commands?
How does the ALTER command work? Can you add or remove columns from an existing table?
What is the purpose of CREATE INDEX in DDL?
How do you define constraints in DDL (e.g., PRIMARY KEY, FOREIGN KEY, CHECK, NOT NULL)?
How would you delete a table in SQL? What would happen if there are foreign keys referencing the table?

DML (Data Manipulation Language)
What is DML, and how does it differ from DDL and DQL?
Explain the difference between INSERT, UPDATE, and DELETE in DML.
How does the ROLLBACK command work in DML? What is its significance?
What is the COMMIT command used for?
What happens if you DELETE data from a table without a WHERE clause?
How do you perform a bulk insert of data into a table?

DQL (Data Query Language)
What is DQL? How is it different from DDL and DML?
What are the different clauses in the SELECT statement?
What is the purpose of the GROUP BY and HAVING clauses? Can you give an example?
Explain the DISTINCT keyword in SQL.
How does the ORDER BY clause work in SQL?
What is the difference between WHERE and HAVING in a SELECT query?

Built-in Functions
What are built-in SQL functions? Can you give examples of aggregate functions?
How does the COUNT(), SUM(), AVG(), MAX(), and MIN() functions work?
What are string functions like CONCAT(), SUBSTRING(), TRIM(), and LENGTH() used for in SQL?
What is the CAST() and CONVERT() function? How do they work in SQL?
What are date functions in SQL, such as GETDATE(), DATEADD(), DATEDIFF()?
How does the IFNULL() function work?

Subqueries
What is a subquery in SQL? How is it different from a join?
Can you use a subquery in a SELECT, FROM, WHERE, and HAVING clause? Provide examples.
How would you optimize a query that uses a subquery?

Joins
What is a join in SQL? Can you explain the different types of joins?
What are INNER JOIN, LEFT JOIN, RIGHT JOIN, CROSS JOIN and SELF JOIN ? Can you explain them with examples?
What is a SELF JOIN and when would you use it?
How would you join three tables in SQL? Provide an example.
What is the significance of ON and USING in joins?
Can you join tables without a matching key? What happens if the data doesn't match?
How would you handle a join when one of the tables has NULL values?

Views
What is a view in SQL? How does it differ from a table?
Can you update data through a view? Explain why or why not.
How do you create a view in SQL? Can you modify an existing view?
What are the advantages and disadvantages of using views in SQL?

Stored Procedures
What is a stored procedure in SQL, and how does it differ from a function?
How do you create a stored procedure? Provide an example.
What is the difference between a stored procedure and a trigger?
Can you pass parameters to a stored procedure? How would you handle input and output parameters?
How do you handle error handling within a stored procedure?
Can you update a table using a stored procedure? How would you write a procedure that updates a record?

Cursor
What is a cursor in SQL, and why would you use it?
Explain the difference between implicit and explicit cursors.
How do you declare, open, fetch, and close a cursor in SQL?
What are the disadvantages of using cursors in SQL?
Can you perform DML operations with a cursor? How?

How does a cursor handle large result sets?
What is the purpose of the FETCH statement in the context of cursors?

Triggers
What is a trigger in SQL, and what is its purpose?
Can you explain the different types of triggers in SQL (e.g., BEFORE, AFTER, INSTEAD OF)?
How do you create a trigger in SQL? Provide an example.
Can you have multiple triggers on the same table? How does that work?
What are the differences between a trigger and a stored procedure?
How do you prevent infinite loops when using triggers?
What is the purpose of the NEW and OLD keywords in a trigger?