# **500 INTERVIEW QUESTIONS**

***Part 1: Basic SELECT (50 Questions)***

1. **Display all columns from the EMP table.**
2. **Display only employee names and salaries.**
3. **Display unique job titles from the EMP table.**
4. **Display employee details who work in department 30.**
5. **Display employees whose salary is greater than 2000.**
6. **Display employees whose job is ‘MANAGER’.**
7. **Display employees hired after 01-JAN-1981.**
8. **Display employees whose commission is not null.**
9. **Display employees working in department 10 or 20.**
10. **Display employees who do not have a manager.**
11. **Display employee names in alphabetical order.**
12. **Display employees with salary between 1000 and 2000.**
13. **Display employees whose names start with ‘S’.**
14. **Display employees whose names end with ‘N’.**
15. **Display employees whose names contain the letter ‘A’.**
16. **Display employees who are not working as SALESMAN.**
17. **Display employees with salaries not between 1500 and 3000.**
18. **Display employees with job ‘CLERK’ or salary greater than 2500.**
19. **Display employees whose commission is greater than their salary.**
20. **Display the 5 highest paid employees.**select \* from emp order by sal desc limit 5;  
     **or**select \* from emp order by sal desc fetch first 5 rows only;
21. **Display the 5 lowest paid employees.**select \* from emp order by sal asc fetch first 5 rows only;
22. **Display the second highest paid employee.**select \* from (select emp.\*, row\_number() over (order by sal desc) as rank from emp) where rank = 2;  
     **or**  
    select max(sal) from emp where sal < (select max(sal) from emp);
23. **Display the employee hired most recently.**select \* from emp order by hiredate desc;
24. **Display the employee hired first in the company.**select \* from emp order by hiredate desc limit 1;
25. **Display employees who joined in 1981.**

select \* from emp where hiredate between date '1981-01-01' and '1981-12-31';  
 **or**select \* from emp where extract(year from hiredate) = 1981;

1. **Display employees who joined in September 1981.**

select \* from emp where TO\_CHAR(hiredate, 'YYYY-MM') = '1981-09';

1. **Display employees who joined on 1st May 1981.**select ename from emp where hiredate = DATE '1980-12-17';
2. **Display the length of each employee’s name.**
3. **Display employee names in uppercase.**
4. **Display employee names in lowercase.**
5. **Display the first three characters of each employee’s name.**select ename, substring(ename from 1 for 3) as first\_three\_chars from emp;  
    **or**select ename, substr(ename, 1, 3) as first\_three\_chars from emp;
6. **Display the last two characters of each employee’s name.**select ename, substr(ename, 1, 3) as first\_three\_chars from emp;
7. **Display employee names along with their job titles in one column.**select ename || ' - ' || job as name\_and\_job from emp;
8. **Display employees along with their annual salary.**
9. **Display employees along with their salary increased by 10%.**
10. **Display employees who earn more than ALLEN.**
11. **Display employees who earn less than MARTIN.**
12. **Display employees with the same job as SCOTT.**
13. **Display employees who work in the same department as JONES.**
14. **Display employees with the same salary as FORD.**
15. **Display employees with salary greater than their manager.**
16. **Display employees who earn more than average salary.**
17. **Display employees who earn less than average salary of department 30.**select \* from emp where sal < (select avg(sal) from emp where deptno = 30);
18. **Display the highest paid employee in each department.**select \* from emp e1 where sal = (select max(sal) from emp e2 where e1.deptno = e2.deptno );
19. **Display the lowest paid employee in each job.**

select \* from emp e1 where sal = (select min(sal) from emp e2 where e1.job = e2.job );

1. **Display the number of employees in each department.**select deptno, count(\*) as num\_of\_emp from emp group by deptno;
2. **Display the number of employees in each job.**
3. **Display total salary paid to each department.**select deptno, sum(Sal) as total\_Salary from emp group by deptno;
4. **Display average salary for each job.**

select job, avg(sal) as average\_Salary from emp group by job;

***Part 2 (Questions 51–100: Filtering, Sorting, Aggregates)***

1. **Display all employees ordered by their salary in ascending order.**
2. **Display all employees ordered by their salary in descending order.**
3. **Display employees ordered by department number and then by salary.**
4. **Display employees ordered by hire date (earliest first).**
5. **Display employees ordered by name length.**
6. **Display top 3 employees with the highest salaries.**
7. **Display top 3 employees with the lowest salaries.**
8. **Display employees ordered by job and then by name.**
9. **Display employees ordered by commission in descending order.**
10. **Display employees ordered by department location and then by name.**
11. **Find the total number of employees in the company.**
12. **Find the total salary paid to all employees.**
13. **Find the maximum salary in the company.**
14. **Find the minimum salary in the company.**
15. **Find the average salary in the company.**
16. **Find the total commission paid to employees.**
17. **Find the number of employees with commission.**
18. **Find the highest commission received.**
19. **Find the lowest commission received.**
20. **Find the average commission given.**
21. **Find the number of managers in the company.**
22. **Find the number of distinct job titles in the company.**
23. **Find the number of employees hired in 1981.**select \* from emp where extract(year from hiredate) = 1981;

select \* from emp where hiredate between '1981-01-01' and '1981-12-31';

select \* from emp where to\_char(hiredate, 'yyyy') = '1981';

1. **Find the number of employees in department 30.**
2. **Find the number of employees with salary greater than 2000.**
3. **Find the number of employees without commission.**
4. **Find the total salary of employees in department 20.**
5. **Find the average salary of employees in department 10.**
6. **Find the highest salary in department 30.**
7. **Find the lowest salary in department 20.**
8. **Display department-wise employee count.**select deptno, count(ename) from emp group by deptno;
9. **Display department-wise total salary.**select deptno, sum(sal) from emp group by deptno;
10. **Display department-wise average salary.**
11. **Display department-wise maximum salary.**
12. **Display department-wise minimum salary.**
13. **Display job-wise employee count.**select job, count(ename) from emp group by job;
14. **Display job-wise total salary.**
15. **Display job-wise average salary.**
16. **Display job-wise maximum salary.**
17. **Display job-wise minimum salary.**
18. **Display department and job-wise total employees.**
19. **Display department and job-wise total salary.**
20. **Display department and job-wise average salary.**
21. **Display department and job-wise highest salary.**
22. **Display department and job-wise lowest salary.**
23. **Display the total number of employees in each location.**
24. **Display the average salary of employees for each location.**
25. **Display the maximum salary paid in each location.**
26. **Display the minimum salary paid in each location.**
27. **Display the count of employees who do not have a manager, grouped by department.**

**Part 3 (Questions 101–150: String, Date & Numeric Functions)**

1. **Display employee names in uppercase.**
2. **Display employee names in lowercase.**
3. **Display the length of each employee’s name.**
4. **Display employee names along with the number of characters in them.**
5. **Display the first three letters of each employee’s name.**
6. **Display the last two letters of each employee’s name.**
7. **Display employee names with ‘\_EMP’ appended at the end.**
8. **Display employee names with their job titles concatenated in one column.**
9. **Display employee names reversed.**
10. **Display employee names with spaces removed.**
11. **Display employees whose names are exactly five characters long.**
12. **Display employees whose names are in uppercase and job in lowercase.**
13. **Display employee names with only the first letter capitalized.**
14. **Display employees whose names start with ‘A’ and have 4 letters.**
15. **Display employees whose names contain double letters like ‘LL’.**
16. **Display employees whose names are palindromes (same forwards and backwards).**
17. **Display the ASCII value of the first character of each employee’s name.**
18. **Display employee names padded with ‘\*’ on the left to make them 10 characters long.**
19. **Display employee names padded with ‘-’ on the right to make them 15 characters long.**
20. **Display employee names with their job repeated twice.**
21. **Display employees hired in the year 1980.**
22. **Display employees hired in the year 1981.**
23. **Display employees hired in the month of May.**
24. **Display employees hired on a Monday.**
25. **Display employees hired before January 1981.**
26. **Display employees hired after June 1981.**
27. **Display the number of years each employee has worked.**
28. **Display the number of months each employee has worked.**
29. **Display the number of days each employee has worked.**
30. **Display the next salary review date as 6 months after hiredate.**
31. **Display employees hired in the last 40 years.**
32. **Display employees hired more than 44 years ago.**
33. **Display employees hired exactly 44 years ago.**
34. **Display employees hired between two specific dates.**
35. **Display employees hired within the last 3 months of 1981.**
36. **Display employees hired in the first quarter of 1981.**
37. **Display employees hired in the second quarter of 1981.**
38. **Display employees hired in the third quarter of 1981.**
39. **Display employees hired in the fourth quarter of 1981.**
40. **Display the day of the week on which each employee was hired.**
41. **Display employee names along with the current system date.**
42. **Display employee names and the difference between current date and hiredate in years.**
43. **Display employee names and their hiredate in format ‘DD-Mon-YYYY’.**
44. **Display employee names and hiredate in the format ‘Day, Month DD, YYYY’.**
45. **Display employee names and hiredate in the format ‘YYYY/MM/DD’.**
46. **Display employees with hiredate as the last day of the month.**
47. **Display employees with hiredate as the first day of the month.**
48. **Display the month name in which each employee was hired.**
49. **Display the year in which each employee was hired.**
50. **Display the quarter (Q1, Q2, Q3, Q4) in which each employee was hired.**

**Part 4 (Questions 151–200: Subqueries)**

1. **Find employees who earn more than ALLEN.**
2. **Find employees who earn less than MARTIN.**
3. **Find employees who work in the same department as JONES.**
4. **Find employees with the same job as SCOTT.**
5. **Find employees with the same salary as FORD.**
6. **Find employees who were hired after BLAKE.**
7. **Find employees who were hired before CLARK.**
8. **Find employees who earn more than the average salary of all employees.**
9. **Find employees who earn less than the average salary of their department.**
10. **Find employees who earn more than the highest salary in department 30.**
11. **Find employees whose salary is higher than at least one SALESMAN.**
12. **Find employees whose salary is higher than all SALESMANs.**
13. **Find employees who work in departments where at least one employee earns more than 3000.**
14. **Find employees who work in departments where the maximum salary is below 2500.**
15. **Find employees who earn the minimum salary in their department.**
16. **Find employees who earn the maximum salary in their job.**
17. **Find employees who joined after the most recently hired MANAGER.**
18. **Find employees who joined before the earliest hired CLERK.**
19. **Find employees who earn the same as the second highest salary.**
20. **Find employees who earn the same as the second lowest salary.**
21. **Find employees working in departments located in CHICAGO.**
22. **Find employees working in departments located in DALLAS.**
23. **Find employees who work in the same department as MILLER.**
24. **Find employees who work in the department with the maximum number of employees.**
25. **Find employees who work in the department with the least number of employees.**
26. **Find employees who work in the department with the highest total salary.**
27. **Find employees who work in the department with the lowest total salary.**
28. **Find employees who work in the department with the highest average salary.**
29. **Find employees who work in the department with the lowest average salary.**
30. **Find employees who work in the department with the maximum commission.**
31. **Find employees whose salary is greater than their manager’s salary.**
32. **Find employees whose salary is less than their manager’s salary.**
33. **Find employees who were hired before their manager.**
34. **Find employees who were hired after their manager.**
35. **Find the manager who earns the highest salary.**
36. **Find the manager who earns the lowest salary.**
37. **Find employees whose salary is greater than the average salary of managers.**
38. **Find employees who do not report to any manager in the EMP table.**
39. **Find managers who have at least one employee reporting to them.**
40. **Find managers who have no employees reporting to them.**
41. **Find employees who work in departments that have no CLERKs.**
42. **Find employees who work in departments that have at least one ANALYST.**
43. **Find employees who work in departments that have both MANAGERs and SALESMANs.**
44. **Find employees who work in departments that have no employees earning more than 2000.**
45. **Find employees whose salary is greater than the average salary of SALESMANs.**
46. **Find employees whose salary is less than the minimum salary of ANALYSTs.**
47. **Find employees who joined before the earliest hiredate in department 10.**
48. **Find employees who joined after the latest hiredate in department 20.**
49. **Find employees whose salary is equal to the maximum salary of department 10.**
50. **Find employees whose salary is equal to the minimum salary of department 30.**

**Part 5 (Questions 201–250: Joins — INNER, OUTER, SELF, CROSS)**

1. **Display employee names along with their department names.**
2. **Display employee names, job titles, and department locations.**
3. **Display employees working in DALLAS.**
4. **Display employees working in CHICAGO.**
5. **Display employees along with department name and location.**
6. **Display employees whose department name is ACCOUNTING.**
7. **Display employees whose department location is NEW YORK.**
8. **Display employees working in the RESEARCH department.**
9. **Display employees working in the SALES department.**
10. **Display employees working in the OPERATIONS department.**
11. **Display department names along with the number of employees in each.**
12. **Display department names with the total salary of employees.**
13. **Display department names with the average salary of employees.**
14. **Display department names with the maximum salary of employees.**
15. **Display department names with the minimum salary of employees.**
16. **Display all departments and their employees, including departments with no employees.**
17. **Display all employees and their departments, including employees without departments.**
18. **Display departments with no employees.**
19. **Display employees who are not assigned to any department.**
20. **Display employees along with their department, sorted by department name.**
21. **Display the names of employees and their managers.**
22. **Display employees along with their manager’s job.**
23. **Display employees who have the same job as their manager.**
24. **Display employees who earn more than their manager.**
25. **Display employees who joined before their manager.**
26. **Display employees along with their manager’s name, department name, and location.**
27. **Display managers who have more than one employee reporting to them.**
28. **Display managers with the highest number of employees reporting.**
29. **Display managers with the least number of employees reporting.**
30. **Display employees with their managers, including employees without managers.**
31. **Display employees along with their department and all other employees in the same department.**
32. **Display employees who have colleagues with the same job.**
33. **Display employees who have colleagues with higher salaries.**
34. **Display employees who have colleagues with lower salaries.**
35. **Display employees along with the highest-paid employee in their department.**
36. **Display employees along with the lowest-paid employee in their job.**
37. **Display employees along with the average salary of their department.**
38. **Display employees along with the total salary of their job group.**
39. **Display employees along with the count of colleagues in their department.**
40. **Display employees along with the count of colleagues with the same job.**
41. **Display all possible employee-department combinations (CROSS JOIN).**
42. **Display all possible job-department combinations.**
43. **Display employees matched with every location (CROSS JOIN).**
44. **Display every employee paired with every other employee.**
45. **Display employees paired with every manager.**
46. **Display every department paired with every job.**
47. **Display employees and their departments using NATURAL JOIN.**
48. **Display employees and their departments using INNER JOIN.**
49. **Display employees and their departments using LEFT JOIN.**
50. **Display employees and their departments using RIGHT JOIN.**

**Part 6 (Questions 251–300: Set Operators — UNION, INTERSECT, MINUS, etc.)**

1. **List all employee job titles and all department names in one column (UNION).**
2. **List all department numbers from EMP and DEPT tables (UNION).**
3. **List all department numbers present in both EMP and DEPT tables (INTERSECT).**
4. **List department numbers present in DEPT but not in EMP (MINUS).**
5. **List department numbers present in EMP but not in DEPT (MINUS).**
6. **Display all job titles from EMP and department names from DEPT (UNION ALL).**
7. **Display distinct job titles from EMP and department names from DEPT (UNION).**
8. **Find common department numbers between EMP and DEPT tables.**
9. **Find job titles that exist in both EMP and DEPT names (if any overlap).**
10. **Find department numbers that are in EMP but missing in DEPT.**
11. **Display employees who earn more than 3000 UNION employees working in department 10.**
12. **Display employees who are MANAGERs UNION employees who are ANALYSTs.**
13. **Display employees who are CLERKs UNION ALL SALESMANs.**
14. **Display employees who joined in 1980 INTERSECT employees earning more than 2000.**
15. **Display employees working in department 20 INTERSECT employees with commission.**
16. **Display employees hired before 1981 MINUS employees working in department 30.**
17. **Display employees earning more than 2500 MINUS employees working in department 10.**
18. **Display employees with commission MINUS employees with job = SALESMAN.**
19. **Display employees in department 10 UNION employees in department 20 UNION employees in department 30.**
20. **Display employees in department 10 INTERSECT employees hired in 1981.**
21. **Display jobs UNION managers’ names.**
22. **Display department locations UNION employees’ job titles.**
23. **Display all employee names UNION ALL department names.**
24. **Display department names INTERSECT job titles.**
25. **Display department numbers INTERSECT employee numbers.**
26. **Display employees working in NEW YORK UNION employees working in DALLAS.**
27. **Display employees working in CHICAGO INTERSECT employees earning more than 1500.**
28. **Display employees hired in 1981 MINUS employees in department 30.**
29. **Display SALESMANs UNION employees with commission > 500.**
30. **Display ANALYSTs INTERSECT employees earning more than 2500.**
31. **Display employees hired before 1981 UNION employees hired after 1983.**
32. **Display employees hired in 1982 MINUS employees earning less than 1500.**
33. **Display employees with salary > 2000 UNION ALL employees with commission.**
34. **Display employees whose job = CLERK INTERSECT employees earning more than 1000.**
35. **Display employees in department 20 MINUS employees with commission.**
36. **Display department names UNION employee jobs.**
37. **Display department names INTERSECT employee names.**
38. **Display department names MINUS employee jobs.**
39. **Display employee jobs MINUS department names.**
40. **Display all possible department numbers UNION employee numbers.**
41. **Display employees with job = MANAGER UNION employees with salary > 2500.**
42. **Display employees hired in 1981 UNION employees in department 10.**
43. **Display employees earning less than 2000 UNION employees in CHICAGO.**
44. **Display employees with commission INTERSECT employees in department 30.**
45. **Display employees in NEW YORK MINUS employees earning more than 3000.**
46. **Display employees in SALES department UNION employees in RESEARCH department.**
47. **Display employees in ACCOUNTING INTERSECT employees with job = CLERK.**
48. **Display employees in OPERATIONS MINUS employees with salary < 1500.**
49. **Display employees with hiredate before 1982 UNION employees with hiredate after 1983.**
50. **Display employees in DALLAS INTERSECT employees with salary between 1500 and 2500.**

**Part 7 (Questions 301–350: Correlated Subqueries & EXISTS / NOT EXISTS)**

1. **Find employees whose salary is greater than the average salary of their department.**
2. **Find employees whose salary is less than the average salary of their job.**
3. **Find employees who earn more than the manager of their department.**
4. **Find employees who joined earlier than all other employees in their department.**
5. **Find employees who joined later than all other employees in their department.**
6. **Find employees who earn more than at least one colleague in their department.**
7. **Find employees who earn less than at least one colleague in their department.**
8. **Find employees who earn the maximum salary in their department (correlated subquery).**
9. **Find employees who earn the minimum salary in their department (correlated subquery).**
10. **Find employees who have the same job as someone in department 10.**
11. **Find employees who have the same salary as someone in department 20.**
12. **Find employees who were hired before the manager of their department.**
13. **Find employees who were hired after the manager of their department.**
14. **Find employees who earn more than the average salary of department 30.**
15. **Find employees who earn less than the average salary of department 10.**
16. **Find employees who work in departments where at least one SALESMAN works.**
17. **Find employees who work in departments where no SALESMAN works.**
18. **Find employees who work in departments where at least one ANALYST works.**
19. **Find employees who work in departments where no CLERK works.**
20. **Find employees who work in departments where all employees earn more than 2000.**
21. **Find employees who work in departments where at least one employee earns less than 1000.**
22. **Find employees who earn more than any employee in department 20.**
23. **Find employees who earn less than every employee in department 10.**
24. **Find employees who joined before any employee in department 30.**
25. **Find employees who joined after all employees in department 20.**
26. **Find employees for whom no one in their department earns more.**
27. **Find employees for whom no one in their department earns less.**
28. **Find employees who have at least one colleague with the same salary.**
29. **Find employees who have at least one colleague with the same hiredate.**
30. **Find employees who have at least one colleague with the same job.**
31. **Find employees whose department has more than 5 employees (using correlated subquery).**
32. **Find employees whose department has fewer than 3 employees.**
33. **Find employees whose department pays more than 5000 in total salaries.**
34. **Find employees whose department average salary is above 2500.**
35. **Find employees whose department average salary is below 1500.**
36. **Find employees where EXISTS a colleague with the same commission.**
37. **Find employees where EXISTS a colleague with higher commission.**
38. **Find employees where EXISTS a colleague with lower salary.**
39. **Find employees where EXISTS a colleague in the same job and department.**
40. **Find employees where EXISTS a manager in the same department.**
41. **Find employees where NOT EXISTS a manager in their department.**
42. **Find employees where NOT EXISTS a colleague with the same job.**
43. **Find employees where NOT EXISTS a colleague with the same salary.**
44. **Find employees where NOT EXISTS a colleague hired in the same year.**
45. **Find employees where NOT EXISTS a SALESMAN in their department.**
46. **Find departments where EXISTS an employee earning more than 3000.**
47. **Find departments where EXISTS an employee earning less than 1000.**
48. **Find departments where NOT EXISTS a CLERK.**
49. **Find departments where NOT EXISTS an employee hired in 1981.**
50. **Find departments where NOT EXISTS an employee with commission.**

**Part 8 (Questions 351–400: Advanced SQL — CTE, Window Functions, Ranking, Case Expressions)**

1. **Display each employee along with their salary rank in the company.**
2. **Display each employee along with their salary rank within their department.**
3. **Display each employee along with their salary rank within their job.**
4. **Display the top 3 highest-paid employees using RANK().**
5. **Display the top 3 highest-paid employees in each department.**
6. **Display employees whose salary rank is 1 in their department (highest earners).**
7. **Display employees whose salary rank is last in their department (lowest earners).**
8. **Display the Nth highest salary using RANK().**
9. **Display the Nth highest salary using DENSE\_RANK().**
10. **Display employees with duplicate salaries using DENSE\_RANK().**
11. **Display each employee’s salary and difference from the department average.**
12. **Display each employee’s salary compared to the average salary of their job.**
13. **Display each employee’s salary as a percentage of the department total.**
14. **Display each employee’s salary difference from the highest salary in their department.**
15. **Display each employee’s salary difference from the lowest salary in their department.**
16. **Display a running total of salaries ordered by hiredate.**
17. **Display a running total of salaries within each department.**
18. **Display a running total of salaries within each job.**
19. **Display a moving average of salaries over 3 employees.**
20. **Display a moving average of salaries by hiredate within each department.**
21. **Display employees along with LAG() function to show the previous employee’s salary.**
22. **Display employees along with LEAD() function to show the next employee’s salary.**
23. **Display employees along with their manager’s salary difference (using window).**
24. **Display employees with the highest salary in each department using FIRST\_VALUE().**
25. **Display employees with the lowest salary in each department using LAST\_VALUE().**
26. **Display employees grouped into salary bands using NTILE(4).**
27. **Display employees divided into 3 equal groups based on salary.**
28. **Display employees divided into 5 equal groups based on hiredate.**
29. **Display the top 10% of employees based on salary.**
30. **Display the bottom 10% of employees based on salary.**
31. **Write a CTE to display all employees in department 10.**
32. **Write a CTE to display employees hired in 1981.**
33. **Write a CTE to display employees with salary > 2500.**
34. **Write a CTE to calculate department-wise average salary.**
35. **Write a CTE to calculate job-wise maximum salary.**
36. **Write a recursive CTE to display employees and their managers hierarchically.**
37. **Write a recursive CTE to display employees with multiple levels of reporting.**
38. **Write a recursive CTE to calculate total salary paid in each department.**
39. **Write a recursive CTE to display hiredate hierarchy from oldest to newest.**
40. **Write a recursive CTE to generate numbers from 1 to 10.**
41. **Use CASE to categorize employees as HIGH, MEDIUM, LOW salary.**
42. **Use CASE to display commission as “NO COMMISSION” if NULL.**
43. **Use CASE to display job description in full words (e.g., MGR → Manager).**
44. **Use CASE to classify employees by year of hire (before 1981, 1981, after 1981).**
45. **Use CASE to classify employees by department location.**
46. **Use DECODE to show salary categories (if Oracle syntax is used).**
47. **Use DECODE to show job descriptions in a custom format.**
48. **Use DECODE to show department names from deptno.**
49. **Use DECODE to replace NULL commission with 0.**
50. **Use DECODE to classify employees into salary ranges.**

**Part 9 (Questions 401–450: Performance, Constraints, Indexes, Transactions,**

1. **What are the different types of SQL constraints?**
2. **How to add a PRIMARY KEY constraint to the EMP table?**
3. **How to add a FOREIGN KEY constraint between EMP.deptno and DEPT.deptno?**
4. **How to add a UNIQUE constraint on employee names?**
5. **How to add a CHECK constraint to ensure salary > 0?**
6. **How to drop a PRIMARY KEY constraint from a table?**
7. **How to drop a FOREIGN KEY constraint from a table?**
8. **How to drop a UNIQUE constraint from a table?**
9. **How to disable and enable a constraint?**
10. **How to rename a constraint?**
11. **How to create an index on employee names?**
12. **How to create a composite index on job and deptno?**
13. **How to drop an index from EMP?**
14. **What is the difference between a unique index and a unique constraint?**
15. **What is the advantage of indexing in SQL?**
16. **How to create a view showing employee names and department names?**
17. **How to create a view showing only managers?**
18. **How to create a view showing employees earning more than 3000?**
19. **How to create a view showing department salary statistics?**
20. **How to update a view?**
21. **Can you insert data through a view? Explain.**
22. **Can you delete data through a view? Explain.**
23. **What are materialized views?**
24. **Difference between view and materialized view?**
25. **What are the limitations of views?**
26. **How to start a transaction in SQL?**
27. **How to commit a transaction?**
28. **How to rollback a transaction?**
29. **How to rollback to a savepoint?**
30. **What is the difference between COMMIT and ROLLBACK?**
31. **What are ACID properties of transactions?**
32. **What is the difference between DELETE and TRUNCATE?**
33. **What is the difference between TRUNCATE and DROP?**
34. **When would you prefer TRUNCATE over DELETE?**
35. **Can TRUNCATE be rolled back? Why or why not?**
36. **How do foreign keys affect DELETE operations?**
37. **What is ON DELETE CASCADE?**
38. **What is ON DELETE SET NULL?**
39. **What is ON UPDATE CASCADE?**
40. **What is referential integrity in SQL?**
41. **What is the difference between clustered and non-clustered indexes?**
42. **Can a table have more than one clustered index? Why?**
43. **What is a composite index?**
44. **What is index selectivity?**
45. **When should you avoid using indexes?**
46. **What is query optimization?**
47. **How to analyze a query execution plan?**
48. **What are database statistics and why are they important?**
49. **What are hints in SQL queries?**
50. **What are common causes of slow SQL queries?**

**Part 10 (Questions 451–500: Theory, Design, Normalization, Advanced & Tricky Interview Questions)**

1. **What is a database schema?**
2. **What is a database instance?**
3. **What is the difference between schema and instance?**
4. **What is data independence?**
5. **What is the difference between logical and physical data independence?**
6. **What is the difference between DBMS and RDBMS?**
7. **What are the advantages of RDBMS over file systems?**
8. **What is the difference between OLTP and OLAP systems?**
9. **What are star schema and snowflake schema?**
10. **What is a fact table and dimension table?**
11. **What is database normalization?**
12. **What is 1NF (First Normal Form)?**
13. **What is 2NF (Second Normal Form)?**
14. **What is 3NF (Third Normal Form)?**
15. **What is BCNF (Boyce-Codd Normal Form)?**
16. **What is 4NF (Fourth Normal Form)?**
17. **What is 5NF (Fifth Normal Form)?**
18. **What are the drawbacks of too much normalization?**
19. **What is denormalization and why is it used?**
20. **Give an example where denormalization is preferred.**
21. **What is a candidate key?**
22. **What is a super key?**
23. **What is the difference between candidate key and super key?**
24. **What is a composite key?**
25. **What is a surrogate key?**
26. **What is an alternate key?**
27. **What is the difference between primary key and unique key?**
28. **What is the difference between natural key and surrogate key?**
29. **What is a weak entity in ER model?**
30. **What is an ER diagram?**
31. **What is the difference between strong and weak relationships in ER diagrams?**
32. **What are the types of relationships in databases?**
33. **What is cardinality in ER diagrams?**
34. **What is total participation in ER diagrams?**
35. **What is partial participation?**
36. **What is a recursive relationship in ER modeling?**
37. **What are database anomalies?**
38. **What is an insertion anomaly?**
39. **What is a deletion anomaly?**
40. **What is an update anomaly?**
41. **What is a deadlock in DBMS?**
42. **What are the conditions for a deadlock?**
43. **How can deadlocks be prevented?**
44. **What is concurrency control?**
45. **What are different concurrency control techniques?**
46. **What is optimistic concurrency control?**
47. **What is pessimistic concurrency control?**
48. **What is the difference between 2-tier and 3-tier database architecture?**
49. **What is sharding in databases?**
50. **What are common tricky SQL interview questions asked to test problem-solving skills?**