SQL Query Questions:

1. **Select Nth maximum salary from a table**

USING SUBQUERY:-

```
SELECT TOP 1 sal
FROM (SELECT TOP N sal
        FROM emp
        ORDER BY sal DESC)
ORDER BY sal ASC;
```

Using DENSE_RANK Function:-

i. With Common Table Expression:

```
with CTE AS
(
SELECT  sal, DENSE_RANK() OVER(ORDER BY sal  DESC) [D_RANK]
FROM emp
)
SELECT * FROM CTE
WHERE D_Rank = 7;          (if u want to find 7th max)
```

ii. Rank function in nested FROM

```
SELECT * FROM
( SELECT e.*,   DENSE_RANK() OVER (ORDER BY sal DESC) RN
FROM emp e) result
WHERE result. RN = N;      (N= 5 if we want to find 5th max)
```

2. **Write a query to select top N salaries from the EMP table**
   (or)
   Write a query to select maximum N salaries from the EMP table

```
SELECT  TOP 5 sal        (N= 5 if we want to find 5 max sal)
FROM emp
ORDER BY DESC;
```

OR

```
WITH CTE ASC(
  SELECT sal, DENSE_RANK() OVER (ORDER BY  sal  DESC) [D_RANK]
  FROM emp
 )
SELECT DISTINCT TOP 7 sal FROM CTE
ORDER BY sal  DESC;
```

OR

```
SELECT * FROM

( SELECT e.*,   DENSE_RANK() OVER (ORDER BY sal DESC) RN

FROM emp e) result

WHERE result.RN >= 5;     (N= 5 if we want to find 5 max sal)
```

3. **WQTD Second highest salary from each department of the emp table.**

```
 SELECT max(sal)
FROM emp
WHERE sal  NOT  IN   ( SELECT  max(sal)
                       FROM emp
                        GROUP BY dept )
GROUP BY dept;
```

4. **Write a query to select top N salaries from each department of the EMP table**
   (or)
   Write a query to select maximum N salaries from each department of the EMP table

```
 WITH CTE AS
(
SELECT dept, sal, DENSE_RANK() OVER(PARTITION BY dept ORDER BY sal  DESC) [RANK]
FROM emp
 )
 SELECT *  FROM CTE
 WHERE Rank  = < 2;
```

5. **Write a query to select duplicate rows from the EMP table**

```
SELECT sal, dept
FROM emp
GROUP BY sal, dept
HAVING COUNT(*)>1;
```

Or

```
select * from
(
SELECT e.*, COUNT(*)OVER(PARTITION BY sal ORDER BY e_id) cnt
FROM empmgr e
) result
where result.cnt > 1;
```

6. **Write a query to select only those employee information who are earning the same salary?**

```
select e1.*
from emp e1 SELF JOIN emp e2
ON  e1.sal = e2.sal
and e1.ename <> e2.ename;
```

USING SUBQUERY:

```
SELECT * FROM emp
WHERE  sal in (SELECT sal FROM emp
                GROUP BY sal
                HAVING count(sal)>1 ) ;      inner query will give the salary which is
repeating
```

USING WINDOWS FUNCTION:

```
WITH cte_cnt   AS
( SELECT e.* , count(*) Over (Partition BY sal  ORDER BY sal) cnt
FROM emp e )
SELECT * FROM cte_cnt
WHERE cnt >=2;
```

```
SELECT * FROM
( SELECT e.*, count(*) Over (Partition BY sal ORDER BY sal) cnt
  FROM emp e ) result
 WHERE result.cnt>=2;
```

7. **Write a query to display even/odd number rows from a table.**

```
 WITH  even  AS
(
SELECT e.*, ROW_NUMBER()OVER (ORDER BY e_id)  AS  rownum
FROM emp e
 )
 SELECT * FROM even
WHERE  rownum  %  2  = 0  ;
```

8. **Write a query to display the employee information, who have more than 2 employees under a manager**

```
 SELECT mgr_id, count(emp_id)
FROM emp
GROUP BY mgr_id
HAVING COUNT(*) > 2;
```

```
 USING WINDOW FUNCTION:
 WITH Boss AS
(
 SELECT e.*, COUNT()OVER (PARTITION BY mgr_id) cnt
 FROM emp
)
SELECT * FROM Boss
WHERE COUNT(*) > 2
```

9. **Write a query to find the maximum salary from the EMP <u>table without using functions</u>.**

```
 SELECT * FROM empmgr
 WHERE sal NOT IN
(
SELECT  A.sal
FROM empmgr A, empmgr B
WHERE  A.sal < B.sal
);
```

Explanation:

1. This will perform self cross join
2. It will find all A_sal which are less than B_sal,like here for 1st 10 records A_sal = 5k,2k,1k,500 <10k like this A_sal = 20k,15k,10k,……500< 25K
So in this way we'll get max sal i.e 25k
3. All the values less than 25k will be in A.sal

And we are selecting sal which are not in A.sal

OUTPUT OF SELF CROSS JOIN:

A_sal	B_sal
10000	10000
20000	10000
5000	10000
15000	10000
7000	10000
25000	10000
15000	10000
2000	10000
1000	10000
500	10000
10000	20000
20000	20000
5000	20000
15000	20000
7000	20000

10. **Write a query to find the number of rows in a table without using COUNT function**

```
WITH Boss AS
    (
     SELECT e.*, ROW_NUMBER()OVER (ORDER BY e_id) sr
     FROM empmgr e
    )
    SELECT MAX(sr) FROM Boss;
```

11. **Write a query to select the last N records from a table**

```
 WITH Boss AS
    (
     SELECT e.*, ROW_NUMBER()OVER (ORDER BY e_id) sr
     FROM empmgr e
    )
    SELECT TOP 5  e_id              (Last 5 records)
    FROM Boss
    ORDER BY e_id DESC;
```

12. **Write a query to find the employees who are working in the company for the past 5 years.**

```
SELECT  * FROM emp
WHERE   hiredate <  add_months (sysdate,-60);
```

13. **Write a query to display Employee name with its manager name**

i. When these two columns are preset in same table

```
SELECT e.emp_name AS Employee,
        m.mgr_name AS Manager
FROM emp e  LEFT JOIN  emp m
ON e.mgr_id = m.emp_id;
```

ii. When these two columns are NOT preset in same table

```
SELECT e.emp_name AS Employee,
        m.mgr_name AS Manager
FROM emp e  LEFT JOIN  manager m
ON e.mgr_id = m.emp_id;
```

14. Write a query to display 50% records from emp table

```
SELECT * FROM emp
WHERE emp_id <=  (SELECT COUNT(emp_id) % 2);
```

15. Select no of employees joined with respect to year and month from employee table

```
SELECT datepart(YYYY, DOJ) Join_Year,
        datepart(MM, DOJ) Join_Month, COUNT(*)
        Total_emp FROM emp
GROUP BY datepart(YYYY, DOJ) Join_Year, datepart(MM, DOJ) Join_Month;
```

16. Select 20 % of salary from John , 10% of Salary for Roy and for other 15 % of salary from employee table

```
SELECT FIRST_NAME,
 CASE FIRST_NAME
 WHEN  'John'  THEN  SALARY * .2
 WHEN  'Roy'  THEN SALARY * .10
 ELSE SALARY * .15
END "Deduced_Amount"
FROM emp;
```

17. Delete employee data from employee table who got incentives in incentive table

```
DELETE FROM emp
WHERE emp_id IN  (SELECT  EMPLOYEE_REF_ID
                  FROM INCENTIVES);
```

(we can't delete data from a table based on some condition in another table by joining them. Here to delete multiple entries from **emp** table, we need to use Subquery. Entries will get deleted based on the result of Subquery.)

18. Select Last Name from employee table which contain only numbers

```
SELECT  * FROM emp
 WHERE  LOWER (LAST_NAME) = UPPER (LAST_NAME);
```

19. Write a query to rank employees based on their incentives for a month

```
SELECT  FIRST_NAME, INCENTIVE_AMOUNT,
        DENSE_RANK() OVER (PARTITION BY INCENTIVE_DATE
                           ORDER BY INCENTIVE_AMOUNT DESC) AS Rank
FROM emp a   INNER JOIN  INCENTIVES b
ON  a.EMPLOYEE_ID = b.EMPLOYEE_REF_ID
```

20. **Write a query to fetch only the first name(string before space) from the FullName column of the Emp table.**

```
SELECT SUBSTRING(Full_Name, 1, CHARINDEX( ' ' , Full_Name))
FROM emp;
```

21. **Write an SQL query to find the count of the total occurrences of a particular character – 'n' in the Full_Name field.**

```
SELECT Full_Name,
LENGTH(Full_Name) - LENGTH(REPLACE(Full_Name, 'n', ' ' ))
FROM emp;
```

(suppose we want to find how many times 'o' occurred in 'Tomorrow'
Then 'o' will be REPLACE by space and then length(tmrrw= 5)
LENGTH(Tomorrow)=8 so, 8-5 = 3 times 'o' has come)

22. **Select first_name, incentive amount from employee and incentives table for all employees even if they didn't get incentives and set incentive amount as 0 for those employees who didn't get incentives**.

```
SELECT  FIRST_NAME, ISNULL(INCENTIVE_AMOUNT,0)
FROM emp  A  LEFT JOIN incentives B
ON  A.EMPLOYEE_ID = B.EMPLOYEE_REF_ID;
```

23. **Select First_Name,LAST_NAME from employee table as separate rows**

```
SELECT  FIRST_NAME from EMPLOYEE
UNION
SELECT LAST_NAME from EMPLOYEE;
```

24. How to delete copy of duplicate records from a table?

```
WITH  T1  AS
(
  SELECT  *, ROW_NUMBER()OVER(PARTITION BY emp_id ORDER BY emp_id) rownum
  FROM emp
)
DELETE  * FROM T1
WHERE rownum >  1;
```

25. Write a query to display employee details who is working in ECE department & who is having more than 3 years of exp?

```
SELECT e.*, DATEDIFF ( yy, DOJ, GETDATE() ) AS Exp
FROM emp
WHERE DATEDIFF(yy, DOJ, GETDATE()) AS Exp > 3
AND dname = 'ECE';
```

26. Write a query in SQL to display the first and last name and salary for those employees who earn less than the employee earn whose number is 182.

```
SELECT e.F_NAME, e.L_NAME, e.sal
FROM emp e  JOIN  emp s
ON e.sal < s.sal
AND s.emp_id = 182
```

(Suppose here the salary of employee with id 182 is having salary = 25000 then the above query return the employees details who earn less salary than 25000 from employee table.**)**

27. Write a query to display the first and last record from emp table

```
SELECT * FROM Emp
WHERE EmpID =  (SELECT   MIN  (EmpID)
                FROM Emp);
```

```
SELECT * FROM Emp
 WHERE EmpID =  ( SELECT MAX(EmpID)
                  FROM Emp);
```

28. Write a query to get employee names starting and ending with a vowel

```
SELECT empid, empname
FROM emp
WHERE empname like '[aeiou]%[aeiou]' ;
```

29. What will be the output of given statement?

```
SELECT SUM (NULL);
```

(MIN, MAX,SUM,AVG none of these function takes NULL parameter/argument. Also, these functions accept only one argument.)

30. What will be the output of given statement?

```
SELECT NULL+1
SELECT NULL+'1';
```

(The output will be NULL. Perform any operation on NULL will get the NULL result.)

31. Get names of employees from emp table who has '%' in ename

```
SELECT * FROM emp
WHERE ename LIKE ‘ % * % % ’ ESCAPE ‘*’;
```

32. Get names of employees from emp table who has '%_' in ename

```
SELECT * FROM emp
WHERE ename  LIKE  ‘ % $ % $_ % ’ ESCAPE ‘$’;
```