Task 1

Find those employees whose salary is less than average salary.

select * from emp

where sal<(select avg(sal) from emp)

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7521	WARD	SALESMAN	7698	02/22/1981	1250	500	30
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30
7844	TURNER	SALESMAN	7698	09/08/1981	1500	0	30
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30

Task 2

Find THE 3rd minimum Salary.

```
SELECT * FROM Emp Emp1
WHERE 2 = (
SELECT COUNT(DISTINCT Emp2.Sal)
FROM Emp Emp2
WHERE Emp2.Sal < Emp1.Sal);
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20

Task 3

Find The Union Of Department Number 10 And Department Number 30.

SELECT * FROM Emp

where deptno=10

union

SELECT * FROM Emp

where deptno=20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20

Task 4

Find the 2nd maximum salary.

SELECT * FROM Emp Emp1

WHERE 1 = (

SELECT COUNT(DISTINCT Emp2.Sal)

FROM Emp Emp2

WHERE Emp2.Sal > Emp1.Sal);

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20

| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

Task 5

Find All Employees With Either The Same job As 'Jones' Or Salary Greater Than Or Equal To Ford, Order By Job And Salary

SELECT * FROM   emp

where job like 'JONES' or   sal >=(select sal from emp where ename='FORD')

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20

Task 6

Find the least experienced employee.

SELECT * FROM Emp Emp1

WHERE hiredate = (select max(hiredate) from emp)

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20

Task 7

Count all employees who were hired before 22-mar-83

SELECT count(*) FROM Emp
WHERE hiredate < '3/22/1983'

COUNT(*)
13

Task 8

Find Average And Sum Of The Salaries Of Each Job Excluding The Job Of Smith.

SELECT job,avg(sal), sum(sal) FROM Emp

where ename not like 'SMITH'

group by job

JOB	AVG(SAL)	SUM(SAL)
SALESMAN	1400	5600
ANALYST	3000	6000
CLERK	1025	2050
MANAGER	2758.33333333333333333333333333333333333	8275
PRESIDENT	5000	5000

Task 9

List those employees who joined before 1985 working under the mgr whose number
 is starting with 7 but Should not have a 9

SELECT   * FROM   emp

WHERE hiredate <'1/1/1985'

and to_char(mgr) like '7%'

and to_char(mgr) not like '9___'

and to_char(mgr) not like '_9__'

and to_char(mgr) not like '__9_'

and to_char(mgr) not like '___9'

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20

Task 10

Find All Employees In Department Number 20 Whose Jobs Are The Same As The Employees Job In The Sales Department.

SELECT   * FROM   emp

where deptno=20

and job in (select job from emp where deptno=(select deptno from dept where dname like 'SALES'))

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20

Task 11

Find All Employees Who Earn More Than The Average Salary Of Employees In Their Own Department And Sort By Department No.

select * from emp where sal in(select avg(sal) from emp e group by job)

ORDER BY deptno

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30

Task 12

Find All Employees Who Earn More Than Any Employee In Department 30.

select * from emp

where sal > any(select sal from emp where deptno=30)

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7844	TURNER	SALESMAN	7698	09/08/1981	1500	0	30
7521	WARD	SALESMAN	7698	02/22/1981	1250	500	30

| 7654 | MARTIN | SALESMAN | 7698 | 09/28/1981 | 1250 | 1400 | 30 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |

Task 13

 Get the minimum salaries of each department using subquery.

select * from emp

where sal in(select min(sal) from emp group by deptno)

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7900	JAMES	CLERK	7698	12/03/1981	950	-	30

Task 14

Get the maximum, minimum, average and sum of salaries of each employee but   make sure to use subquery for each operation.

SELECT MAX(SAL) "max sal",MIN(SAL) "min sal",AVG(SAL) "avg sal",SUM(SAL) "sum" from emp

where SAL IN (SELECT SAL FROM EMP)

group by DEPTNO

max sal	min sal	avg sal	sum
2850	950	1566.6666666666666666666666666666666667	9400
5000	2450	3725	7450

3000	800	2175		10875

Task 15

List the mgrs who are senior to KING and junior to SMITH.

select * from emp where

mgr is not NULL and empno in

(select mgr from emp

where hiredate<(select hiredate from emp where ename = 'KING')

and hiredate > (select hiredate from emp where ename = 'SMITH'))

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30

Task 16

Write a query in SQL to display the name of manager who is supervising 2 or more employees.

select * from emp where empno in (select mgr from emp group by mgr having

count(*) >=2) ;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30

| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |

Task 17

Find the 2nd maximum salary of each department.

select deptno,max(sal) from emp

where sal<(select max(sal) from emp)

group by deptno

DEPTNO	MAX(SAL)
30	2850
10	2450
20	3000

Task 18

Display the employee name, department number, and job title for all employees whose department location is New York.

SELECT   e.ename, d.deptno, e.job

 FROM   emp e, dept d

WHERE   e.deptno = d.deptno and d.loc='NEW YORK'

ENAME	DEPTNO	JOB
CLARK	10	MANAGER
KING	10	PRESIDENT

Task 19

Find the 2nd minimum salary of each job

select deptno,min(sal) as "2nd min sal" from emp

where sal>(select min(sal) from emp)

group by deptno

DEPTNO	2nd min sal
30	950
10	2450
20	1100

Task 20

The following query throws an error. Choose the correct reason for the error as given in the options.

```
SELECT empno, ename
FROM emp
WHERE comm= (SELECT min(comm)
      FROM emp
      GROUP BY deptno);
```

    A. The GROUP BY clause is not required in the sub-query
    B. A function cannot be used in a sub-query SELECT statement
    C. The single row sub-query gives multiple records
    D. The use of "=" operator is invalid; an IN operator will work correctly

ANS: D