

2013 PAST PAPER

SCHEMA:-

Emp ( Empno, Ename, Sal, Comm,  
Deptno, mgr, job, HireDate )

Dept ( Deptno, Dname, Loc )

SalGrade ( Hisal, Losal, SalGrade )

Emp:

Empno	Ename	Sal	Comm	Deptno	mgr	Job	Hiredate
100	King	15000	2000	10	103	Accounts	2021-04-12
101	Ford	12000	300	10	104	Accounts	2021-06-24
102	Michel	17000	1800	10	104	Accounts	2021-11-17
103	Lara	18000	1500	20	108	Programmer	2022-03-12
104	Jordan	13000	20	20	108	Programmer	2022-07-17
105	Queen	21000	4500	30	108	HR	2020-12-23
106	Adam	11000	1000	10	103	Accounts	2022-05-12
107	Sam	13000	1000	20	104	Clerk	2021-10-16
108	Yaseer	25000	6600	40		Manager	2020-02-11

Dept:

Deptno	Dname	Loc
10	Accounts	Karachi
20	Backend	Lahore
30	Management	Islamabad
40	Executive	Islamabad

SalGrade:

Hisal	Losal	SalGrade
15000	10000	1
20000	15001	2
25000	20001	3
30000	25001	4
35000	30001	5

DATA BASE  
PAST PAPER 2013

SHORT ANSWERS

Q-2

- (ii) Write a query to show the location & name of those whose salary is less than the salary of King.

Answer:

(Query)

```
SELECT a.Empno , a.Ename , a.Sal ,  
       b.loc FROM Emp a INNER JOIN  
       Dept b ON a.deptno = b.deptno  
WHERE a.sal < (SELECT Sal  
FROM Emp WHERE Ename = 'King');
```

Output:-

Empno	Ename	Sal	Loc
101	Ford	12000	Karachi
104	Jordan	13000	Lahore
106	Adam	11000	Karachi
107	Sam	13000	Lahore

(iii) Show the salary Grade of all employees whose salary is greater than the salary of King, Ford and Michel.

Answers:-

(Query)

```
SELECT a.Empno, a.Ename, a.Sal,  
       b.SalGrade FROM Emp a  
INNER JOIN SalGrade b ON  
(a.Sal BETWEEN b.loSal AND  
b.hiSal) WHERE a.Sal > ALL  
(SELECT Sal FROM Emp WHERE  
Ename IN ('King', 'Ford',  
'Michel'));
```

Output:-

Empno	Ename	Sal	SalGrade
103	Lara	18000	2
105	Queen	21000	3
108	Yaseer	25000	3

(iii) Show the name and job title of all those employees whose name is containing "Z" or at fifth place having "S" or starting with "Y" or having two A's in it and job title is greater than Accounts.

Answer:

(Query)

```
SELECT Empno, Ename, job FROM  
Emp WHERE (Ename LIKE '%/z%'  
OR Ename LIKE '_S%') OR  
Ename LIKE 'Y%' OR Ename  
LIKE '%A%A') AND Deptno >  
(SELECT Deptno FROM Dept  
WHERE Dname = 'Accounts');
```

Output :-

Empno	Ename	Job
103	Lara	Programmer
108	Yasser	Manager

(iv) Display the name of all those employees who join the company after six month of King and currently serving in Lahore.

Answer:-

(Query)

```
SELECT Empno, Ename, Hiredate  
FROM Emp WHERE Hiredate >  
(SELECT DATE_ADD(Hiredate,  
INTERVAL 6 MONTH) FROM Emp  
WHERE Ename = 'King') AND  
Deptno IN (SELECT Deptno FROM  
Dept WHERE Loc = 'Lahore');
```

Output :-

Empno	Ename	Hiredate
103	Lara	2022-03-12
104	Jordan	2022-09-17
107	Sam	2021-10-16

(v) Display the name of those employees whose salary is greater than average salary of all departments and less than the salary of maximum salary of all departments.

Answer:

(Query)

```
SELECT Empno, Ename, Sal FROM
  Emp WHERE Sal > ALL (SELECT AVG(Sal)
    FROM Emp GROUP BY Deptno) AND
    Sal < ALL (SELECT MAX(Sal) FROM
      Emp GROUP BY Deptno);
```

Output:-

AVG(A.Sal)	MAX(A.Sal)	DNAME
13750	17000	Accounts
14666.66	18000	Backend
21000	21000	Management
25000	25000	Executive

# Past Paper 2014

## SHORT ANSWERS

Q-2

SCHEMA:-

The boat reservation database has the following schema:

Sailor: Sname (string), rating (integer)

boat: bname (string), color (string),  
rating (integer)

reservation: Sname (string), bname (string)  
, weekday (string)

The rating attribute for boats indicates the minimum rating required of a sailor reserving the boat. In addition, the following hold:

- Sname is the primary key of sailor (so every has just one rating);
- bname is the primary key of boat (so every boat has just one color and one rating);
- bname is the foreign key in the reservation relation, referencing relation boat (so every bname in reservation occurs in boat, but the converse need not be true)

- bname is a foreign key in the reservation relation, referencing relation sailor (so every bname in reservation occurs in sailor, but the converse need not be true).

boat:

bname	color	rating
Bay	Red	3
Interlake	Red	8
Marine	Blue	7
Speed Queen	White	9

## Reservation:

sname	bname	weekday
Andy	Bay	Wednesday
Andy	Marine	Saturday
Andy	Interlake	Monday
Rusty	Interlake	Wednesday
Bob	Bay	Monday
Rusty	Marine	Wednesday
Rusty	Bay	Sunday

## Sailor:

sname	rating
Andy	8
Bob	1
Brutus	1
Horatio	7
Rusty	8

- (a) (2 points) List all boats reserved on Wednesday and their color.

Answer:

(Query) SELECT a.bname, b.color FROM reservation a INNER JOIN boat b ON a.bname = b.bname WHERE

a.weekday = 'Wednesday';

Output:-

bname	color
Bay	Red
Interlake	Red
Marine	Blue

(b) (2 points) List all sailors never reserve a boat on Friday.

Answer:

(Query)

```
SELECT sname, WEEKDAY FROM  
reservation WHERE NOT WEEKDAY  
= 'Friday';
```

Output:-

sname	WEEKDAY
Andy	Wednesday
Andy	Saturday
Andy	Monday
Rusty	Wednesday
Bob	Monday
Rusty	Wednesday
Rusty	Sunday

(c) (2 points) Write a query to tell sum of sailor reserve boat on Wednesday.

Answer:

(Query)

```
SELECT COUNT(Sname) AS  
'Total Reservations' FROM reservation  
WHERE WEEKDAY = 'Wednesday';
```

Output:-

Total Reservations
3

(d) (2 points) For each day, list the number of red boats reserved on that day.

Answer:

(Query)

```
SELECT a.weekday, COUNT(a.bname)  
AS 'Red Boats Reserved' FROM  
reservation a INNER JOIN boat b  
ON a.bname = b.bname WHERE  
b.color = 'red' GROUP BY a.weekday;
```

Output:-

Weekday	Red Boats Reserved
Wednesday	2
Monday	2
Sunday	1

(e) (2 points) Write a query to find the sum of reservation in which Andy reserve Interlake or Speed Queen.

Answer:

(Query)

```
SELECT COUNT(sname) AS 'Andy Reservations' FROM reservation  
WHERE sname = 'Andy' OR AND  
bname IN ('Interlake', 'Speed Queen');
```

Output:-

Andy Reservations
1

Q - 3

SCHEMA:-

Consider the following relations:

Empl (eno, ename, title, city)

Proj ( pno, pname, budget, city)

Works ( eno, pno, resp, dur)

Pay ( title, salary)

Where Primary Keys are underlined  
and Emp.title is a foreign key to  
Pay.title , Works.eno is a foreign  
key to Emp.eno and Works.pno  
is a foreign key to Proj.pno.

emp:

Eno	Ename	Title	City
E1	John	Elec. Eng.	Lahore
E2	Smith	Syst. Anal.	Islamabad
E3	Lee	Mech. Eng.	Lahore
E4	Michel	Programmer	Islamabad
E5	Miller	Mech. Eng.	Islamabad
E6	Davis	Elec. Eng.	Lahore.

pay:

Title	Salary
Elec. Eng.	40000
Mech. Eng.	27000
Programmer	24000
Syst. Anal.	34000

proj:

Pno	pname	Budget	City
P1	Instrumentation Database	150000	Lahore
P2	Prog.	135000	Lahore
P3	CAD/CAM	250000	Islamabad
P4	Maintenance	310000	Islamabad

works:

eno	pno	Resp	dur
E1	P1	Manager	12
E2	P1	Analyst	24
E2	P2	Analyst	8
E3	P3	Consultant	24
E3	P4	Engineer	16
E4	P2	Programmer	18
E5	P3	Manager	31
E6	P4	Engineer	36

(a) (3 points) For each city, how many projects are located in that city and what is the total budget over all projects in the city?

Answer:

(Query)

```
SELECT city, SUM(budget) AS 'Project Budgets', COUNT(pno) AS 'No. of Projects'  
FROM Proj GROUP BY City;
```

Output:

City	Project Budget	No. of Projects
Lahore	285000	2
Islamabad	560000	2

(b) (3 points) List all projects located in "Lahore".

Answer:

(Query)

```
SELECT pno, pname, budget FROM  
Proj WHERE city = 'Lahore';
```

Output:-

Pro	Name	Budget
P1	Instrumentation	150000
P2	Database Prog.	135000

(c) (4 points) Write a query to the name of employees working in cadcam proj and their city is not Lahore and resp is manager and salary is less than 20000.

Answer:-

(Query)

```
SELECT a.empno, b.ename, c.pname, a.resp,
d.salary FROM Works a INNER JOIN
emp b ON a.empno = b.empno INNER JOIN
Proj c ON a.pno = c.pno INNER JOIN
Pay d ON b.title = d.title WHERE
c.pname = 'CAD/CAM' AND NOT b.city = 'Lahore'
AND d.salary < 20000;
```

Output:-

Title	Salary
Elec. Eng.	40000
Mech. Eng.	27000
Syst. Anal.	34000
Programming	24000

# PAST PAPER 2015

## SHORT ANSWERS

Q-2

SCHEMA:

Proj:

Pno	Pname	Budget
P1	Instrumentation	150000
P2	Database Prog.	135000
P3	CAD/CAM	250000
P4	Maintenance	310000

Pay:

Title	Sal
Elec. Eng.	40000
Mech. Eng.	27000
Programmer	24000
Syst. Anal.	34000

Employee:

ENo	EName	Title	Bonus	Hiredate
E1	John	Elec.Eng.	1000	1990-11-22
E2	Smith	Syst. Anal.	2000	1990-06-27
E3	Lee	Mech. Eng.	1000	1990-12-15
E4	Michel	Programmer		1990-02-11
E5	Miller	Syst. Anal.	2000	1991-02-11
E6	Davis	Elec.Eng.		1993-02-07

Asg:

C	Pno	Resp	Dur
E1	P1	Manager	12
E2	P1	Analyst	24
E2	P2	Analyst	8
E3	P3	Consultant	24
E3	P4	Engineer	16
E4	P2	Programmer	18
	P2	Manager	0
E6	P4	Engineer	36

- (i) Give name of all the employees working as a manager and getting salary between 34000 to 50000.

Answer:-

(Query)

```
SELECT a.Eno, b.ename, c.Sal FROM  
ASGi a INNER JOIN Employee b ON  
a.Eno = b.Eno INNER JOIN Pay c ON  
b.Title = c.Title WHERE a.Resp = 'Manager'  
AND c.Sal BETWEEN 34000 AND  
50000;
```

Output:-

Eno	EName	Sal
E1	John	40000

(ii) Give the name of all projects, their Budget amount and total amount pay to these project employees in Descending Order.

Answer:-

(Query)

```
SELECT b.Pname, b.Budget, SUM(d.Sal)  
'Total Paid' FROM ASGi a INNER JOIN  
Proj b ON a.Pno = b.Pno INNER JOIN  
Employee c ON a.Eno = b.Eno  
INNER JOIN Pay d ON c.Title = d.  
Title GROUP BY b.Pname, b.Budget;
```

Output:-

Pname	Budget	Total Paid
Instrumentation	150000	74000
Database Prog.	135000	58000
CAD/CAM	250000	270000
Maintenance	310000	67000

(iii) Give the salary, name and title of all the employees who has single 'A' in their name.

Answers:-

(Query)

```
SELECT a.Eno, a.Ename, a.Title, b.Sal  
FROM Employee a INNER JOIN Pay b  
ON a.Title = b.Title WHERE  
a.Ename LIKE '%a%' AND a.Ename  
NOT LIKE '%a:/a%';
```

Output:-

Eno	Ename	Title	Sal
E6	Davis	Elec. Engg.	40000

(iv) Show name and give 25% bonus to those managers whose working duration is more than 24 hours and they are not working on CAD/CAM project.

Answer:

(Query)

```
SELECT b.Ename, a.Resp, c.Sal,  
(c.Sal + c.Sal * 0.25) AS 'BonusSalary',  
d.Pname, a.Dur FROM ASG a  
INNER JOIN Employee b ON a.Emo =  
b.Emo INNER JOIN Pay c ON  
b.title = c.title INNER JOIN Proj d  
ON a.Pno = d.Pno WHERE a.Resp = 'Manager'  
AND NOT d.Pname = 'CAD/CAM' AND  
a.Dur > 24;
```

Output:-

(V) Show the name, Project name and Salary of a person working maximum number of hours and give 10% Bonus to this employee and show the attribute with the heading Bonus + Salary with rounding the digit after 1<sup>st</sup> place of decimal.

Answer:

(Query)

```
SELECT c.Pname, b.Emo, b.Ename,  
d.Sal, (d.Sal * 0.10) AS 'Bonus',  
ROUND (d.Sal + d.Sal * 0.10, 1) AS  
'Bonus + Salary' FROM ASG a  
INNER JOIN Employee b ON a.Emo =  
b.Emo INNER JOIN Proj c ON  
a.Pno = c.Pno INNER JOIN Pay d  
ON b.Title = d.Title;
```

Output:

Pname	Emo	Ename	Sal	Bonus	Bonus + Salary
Instrumentation	E1	John	40000	4000	44000
Instrumentation	E2	Smith	34000	3400	37400
Database Prog.	E2	Smith	34000	3400	37400
CAD/CAM	E3	Lee	27000	2700	29700
Maintenance	E3	Lee	27000	2700	29700
Database Prog.	E4	Michel	24000	2400	26400
Maintenance	E6	Davis	40000	4000	44000

PAST PAPER 2016  
 SHORT ANSWERS.  
SCHEMA:- Q-5

dep:

Deptno	Deptname	Location
10	Finance	LHR
20	Accounts	ISL
30	IT	KHI

SalGrade:

Grade	minsal	maxsal
1	10000	18000
2	18001	26000
3	26001	34000
4	34000	9000

Emp:

Emp-ID	Emp-Name	Dept-ID	Salary	Deptname
1	John	1	20000	10
2	Smith	1	20000	20
3	Lee	2	12000	10
4	Sam	3	12000	10
5	Jordan	3	70000	10
6	Lara	4	50000	20
7	Adam	2	60000	20
8	Michel	1	80000	30
9	Andrew	3	50000	30
10	Roy	1	25000	10

- (ii) Write a query to get details of  
Backward Recovery those employees  
where emp name are not ROY, JOHN and SMITH.

Answer:

(Query)

```
SELECT Emp ID, Emp Name, Dept ID,  
Salary FROM emp WHERE Emp Name  
NOT IN ('ROY', 'JOHN', 'SMITH');
```

Output:

Emp ID	Emp Name	Dept ID	Salary
3	Lee	2	12000
4	Sam	3	12000
5	Jordan	3	70000
6	Lara	4	50000
7	Adam	2	60000
8	Michel	1	80000
9	Andrew	3	50000

- (iii) Show the ename and salgrade of  
all employees working in Adam  
department.

Answer:

(Query)

```
SELECT a.Emp-ID, a.Emp-Name,  
b.Grade FROM emp a INNER JOIN  
Salgrade b ON a.Salary BETWEEN  
b.minsal AND b.maxsal) WHERE  
a.deptno = (SELECT deptno FROM  
emp WHERE Emp-Name = 'Adam');
```

Output:

Emp-ID	Emp-Name	Grade
2	Smith	2
7	Adam	4
6	Lara	4
5	Jordan	4

(iii) Show the name and salary of those employees getting sal more than average sal of FINANCE department.

Answer:

(Query)

```
SELECT Emp-ID, Emp-Name, b.Deptname Salary  
FROM emp WHERE Salary > (SELECT  
AVG(Salary) FROM EMP WHERE  
deptno = (SELECT deptno FROM dept  
WHERE Deptname = 'Finance'));
```

Output:-

Emp ID	Emp-Name	Salary
1	John	20000
2	Smith	20000
5	Jordan	70000
6	Lara	50000
7	Adam	60000
8	Michel	80000
9	Andrew	50000
10	Roy	25000

(iv) Write a query to display the name and dname of all employees working in Smith department.

Answer:-

(Query)

```
SELECT a.Emp-ID, a.Emp-Name,  
       b.Deptname FROM emp a INNER JOIN  
       dept b ON a.Deptno = b.Deptno  
WHERE a.Deptno = (SELECT Deptno  
                  FROM emp WHERE Emp-Name = 'Smith');
```

Output :-

Emp ID	Emp Name	Deptname
2	Smith	Accounts
5	Jordan	Accounts
6	Lara	Accounts
7	Adam	Accounts

PAST PAPER 2017

SHORT ANSWERS

Q-2

SCHEMAs:-

Dept:

Deptno	Deptname
1	Hadia Soft Backend Team
2	Hadia Soft Inter Services
3	Hadia Soft HR
4	Hadia Soft Support Team
5	Maintenance Team.

Emp:

Emp-id	emp-name	salary	deptno
100	John	21000	1
101	Roy	27000	1
102	Smith	38000	5
103	Norma	31000	5
104	Alex	23000	2
105	Jason	17000	2
106	Ramos	18000	3
107	King	38000	4
108	Jordan	19000	4

(i) Write a Query to get details of those employees whose employees name are "John", "Ray" and "Smith"

Answer:

(Query)

```
SELECT * FROM EMP WHERE emp-name  
NOT IN ('John', 'Ray', 'Smith');
```

Output:-

emp-id	emp-name	Salary	deptno
103	Norma	31000	5
104	Alen	23000	2
105	Jason	17000	2
106	Rames	15000	3
107	King	38000	4
108	Jordan	19000	4

(ii) Write a query to display emp-id of those employees whose emp-name contains 'O' OR working in same department as 'SMITH'.

Answer:

(Query) 

```
SELECT emp-id, emp-name  
FROM EMP WHERE emp-name LIKE '%o%'  
OR deptno = (SELECT deptno FROM EMP
```

WHERE emp-name = 'SMITH');

Output:

emp-id	emp-name
100	John
101	Roy
102	Smith
103	Norma
105	Jason
106	Ramos
108	Jordan

(iii) Write a query to display the emp-id of those employees whose Salary is between 20000 and 30000 OR maximum salary greater than 35000.

Answer:

(Query)

SELECT emp-id, emp-name, ~~FROM~~ salary  
FROM EMP WHERE salary BETWEEN  
20000 AND 30000 OR salary <  
(SELECT MAX(Salary) FROM EMP);

Output:-

emp_id	emp_name	salary
100	John	21000
101	Roy	27000
102	Smith	38000
103	Norma	31000
104	Alen	23000
105	Jason	17000
106	Ramos	15000
107	King	38000
108	Jordan	19000

(iv) Select department, total salary  
with respect to a department  
from employee table where total  
salary greater than 80000 order  
by Total-Salary descending.

Answer:-

(Query)

SELECT a.deptno, b.deptname, SUM

(a.salary) AS 'Total Salary' FROM EMP

a INNER JOIN Dept b ON

a.deptno = b.deptno GROUP BY a.deptno

HAVING SUM(a.salary) > 80000

ORDER BY SUM(a.salary) DESC;

Output:-

(v) Write a query to display department wise minimum salary of employees order by salary descending.

Answer:

(Query)

```
SELECT a.deptno , b.deptname , MIN  
(a.salary) AS 'Minimum Salary'  
FROM EMP a INNER JOIN Dept b  
ON a.deptno = b.deptno GROUP BY  
a.deptno ORDER BY MIN(a.salary)
```

DESC;

Output:-

deptno	deptname	Minimum Salary
5	Maintenance Team	31000
1	Hadia Soft Backend Team	21000
4	Hadia Soft Support Team	19000
2	Hadia Soft Inter Services	17000
3	Hadia Soft HR	15000

PAST PAPER 2018  
SHORT ANSWERS  
Q-5

SCHEMAs:-

emp:

Emp-ID	Emp-Name	Dept-ID	Salary	Deptno
1	John	1	20000	10
2	Smith	1	20000	10
3	Lee	2	12000	10
4	Samp Jordan	3	12000	10
5	Jordan	3	70000	20
6	Lara	4	50000	20
7	Adam	2	60000	30
8	Michel	1	80000	30
9	Andrew	3	50000	30

dept:

Deptno	Deptname	Location
10	Finance	LHR
20	Accounts	ISL
30	IT	KHI

(a) Show Emp name Salary of those employees working in LHR and working in finance and having salary less than the average salary of all employees.

Answer:

(Query)

```
SELECT Emp-ID, Emp-Name FROM  
EMP WHERE Deptno = (SELECT Deptno  
FROM DEPT WHERE Location = 'LHR'  
AND Deptname = 'Finance') AND  
Salary < (SELECT AVG(Salary) FROM  
EMP);
```

Output:-

Emp ID	Emp-Name
1	John
2	Smith
3	Lee
4	Sam

(b) Find ename and salary of those employees getting salary less than the average salary of any department.

Answer:-

(Query)

```
SELECT Emp-ID, Emp-Name, Salary  
FROM EMP WHERE Sal Salary <  
ANY (SELECT AVG(Salary) FROM  
EMP GROUP BY Deptno);
```

Output:-

Emp-ID	Emp-Name	Salary
1	John	20000
2	Smith	20000
3	Lee	12000
4	Sam	12000
6	Lara	50000
7	Adam	60000
9	Andrew	50000

(c) Find the total number of employees department wise.

Answer:

(Query)

```
SELECT Deptno, COUNT(Emp-ID) AS  
'Total Employees' FROM EMP  
GROUP BY Deptno;
```

Output:-

Deptno	Total Employees
10	4
20	2
30	3

(d) Show emp-name of those employees  
whose getting salary more than  
Smith and less than Lara.

Answer:

(Query)

```
SELECT Emp-ID, Emp-Name FROM EMP
```

```
WHERE Salary > (SELECT Salary FROM  
EMP WHERE Emp-Name = 'Smith')
```

```
AND Salary < (SELECT Salary FROM  
EMP WHERE Emp-Name = 'Lara'))
```

Output:-

(e) Show ename salary of employees working in Jordan department but getting salary more than Jordan.

Answer:-

(Query)

```
SELECT Emp-ID, Emp-Name FROM EMP  
WHERE Deptno = 1 SELECT Deptno  
FROM EMP WHERE Emp-Name = 'Jordan'  
AND Salary > (SELECT Salary FROM  
EMP WHERE Emp Name = 'Jordan');
```

Output:-

# PAST PAPER 2019

## SHORT ANSWERS

Q-2 (B)

SCHEMA:-

Emp ( empno, ename, sal, comm,  
hiredate, mgr, deptno )

emp:

empno	ename	sal	comm	Hiredate	mgr	deptno
100	King	13000	2500	2022-10-23		10
103	Conquerer	18000	2500	2021-12-25	100	10
105	Queen	15000		2022-09-19	100	10
107	Horse	10000	1700	2022-05-17	110	10
110	Soldier	7000	890		117	30
117	Rock	21250	3700	2021-11-14	105	20

Dept ( deptno, dname, loc )

dept:

deptno	dname	loc
10	Manager	New York
20	Clerk	Lahore
30	Manager	Chicago

SalGrade (Grade, minsal, maxsal)  
salgrade:

Grade	minsal	maxsal
1	1500	12000
2	12001	18000
3	18001	22000

- (i) Show the name and salary of all clerks having salary grade 1 and 2 or manager.

Answer:

(Query)

SELECT a.empno, a.ename, b.dname,  
a.sal, c.Grade FROM EMP a

INNER JOIN Dept b ON

a.deptno = b.deptno INNER JOIN

SalGrade c ON (a.sal BETWEEN

c.minsal AND c.maxsal)

WHERE (c.Grade IN (1, 2)) AND

b.dname = 'Clerk') OR b.dname =

'Manager';

Output:-

Empno	EName	DName	Sal	Grade
110	Soldier	Manager	7000	1
107	Horse	Manager	10000	1
105	Queen	Manager	15000	2
103	Conqueror	Manager	18000	2
100	King	Manager	13000	2

(iii) Show the deptname, Grade and  
ename of all employees working  
in New York or Chicago

Answers

(Query)

```
SELECT a.EName, b.deptno, b.DName,  
c.Grade FROM EMP a INNER JOIN  
Dept b ON a.deptno = b.deptno  
INNER JOIN SalGrade c ON (a.Sal  
BETWEEN c.minsal AND c.mansal)  
WHERE b.Loc IN ('Chicago', 'New York');
```

Output:-

EName	Deptno	DName	Grade
Soldier	30	Manager	1
Horse	10	Manager	1
Queen	10	Manager	2
Conqueror	10	Manager	2
King	10	Manager	2

(iii) Show the name of those employees working with King and getting less sal than King but hired before King.

Answer:

(Query)

```
SELECT Empno, Ename FROM EMP WHERE  
Deptno = (SELECT Deptno FROM EMP  
WHERE Ename = 'King') AND Sal <  
(SELECT Sal FROM EMP WHERE Ename =  
'King') AND Hiredate < (SELECT  
Hiredate FROM EMP WHERE Ename =  
'King');
```

Output:-

Empno	Ename
107	Horse

(iv) Show ename of all employees getting salary more than King but less than any employee of dept 30 and more than any employee of department 30.

Answer:

(Query)

```
SELECT Empno, EName FROM EMP  
WHERE Sal > (SELECT Sal  
FROM EMP WHERE EName = 'King')  
AND Sal < (SELECT Min(Sal) FROM  
EMP WHERE Deptno = '20') AND  
Sal > (SELECT Max(Sal) FROM  
EMP WHERE Deptno = '30');
```

Output:-

Empno	EName
103	Conqueror
105	Queen

(V) Show name and salary of all employees working with King and getting salary less than the King.

Answer:

(Query)

```
SELECT Empno, EName FROM EMP  
WHERE Deptno = (SELECT Deptno  
FROM EMP WHERE EName = 'King')  
AND Sal < (SELECT Sal FROM  
EMP WHERE EName = 'King');
```

Output:-

Empno	E Name
107	Horse

## PAST PAPER 2020

### SHORT ANSWERS

Q-2

SCHEMA:-

Employee (Eno, Ename, EAddress,  
ESalary, Dept-No, Proj-No)

Employee:

Eno	Ename	EAddress	ESalary	Dept-No	Proj-No
100	Ali	Lahore Cantt	12000	1	901
101	Zamn	Gulshan Rani	11700	2	905
103	Tauseef	Shahdara	11900	5	902
105	Muneeb	Begum Kot	11900	3	908
107	Dawood	Attari	15000	1	915

Department (Deptno, Dept-Name, Dept-Manager-no,  
Dept-Location)

Department:

Deptno	Dept-Name	Dept-Manager No	Dept-Location
1	Hadia Soft Techlab		Lahore
2	Hadia Soft Backend Team	103	Lahore
3	Hadia Soft Testing Team	107	Lahore
4	Hadia Soft Cafe	105	Lahore
5	Hadia Soft Head Office		Lahore

Project (Proj-No, Proj-Name, Deptno)

Project:

Proj-No	Proj-Name	Deptno
901	Web App	1
902	Weather App	5
903	News Cast	3
905	Drone Delivery	15
908	Hadia Soft	1
915	Finance Managing	5

(a) Find the Employee Names and their related department Name,

Answers

(Query)

```
SELECT a.eno, a.EName, b.Dept-Name
FROM Employee a INNER JOIN
Department b ON a.Deptno = b.deptno;
```

Output:-

Eno	E-name	Dept-Name
100	Ali	Hadia Soft Tech Lab
101	Zamn	Hadia Soft Backend Team
103	Tauseef	Hadia Soft Head Office
105	Muneeb	Hadia Soft Testing Team
107	Dawood	Hadia Soft Tech Lab

(b) Find the Department Name,  
Department Location and which  
Project is Handling By department.

Answer:

(Query)

```
SELECT a.Deptno, a.Dept-Name, a.  
Dept-Location, b.Proj-No, b.Proj-Name  
FROM Department a INNER JOIN  
Project b ON b.Dept.no = a.deptno;
```

Output:-

Deptno	Dept-Name	Dept-Location	Proj-No	Proj.Name
1	Hadia Soft Tech Lab	Lahore	901	Web App
5	Hadia Soft Backend Team	Lahore	902	Weather App
3	Hadia Soft Head Office	Lahore	903	News Cast
1	Hadia Soft Testing Team	Lahore	908	Hadia Soft
5	Hadia Soft Tech Lab	Lahore	915	Finance Managing

(c) Show the Names and Salary as 'Increased Salary' after giving increment of 15 percent to each employee.

Answer:

(Query)

```
SELECT Eno, E-name, E-Salary,  
(E-Salary + E-Salary * 15/100) AS  
"Increased Salary" FROM Employee;
```

Output:-

Eno	E-Name	E-Salary	Increased Salary.
100	Ali	12000	13800
101	Zann	11700	13455
103	Tauseef	11900	13685
105	Muneeb	11900	13685
107	Dawood	15000	17250

(d) Find only those department names which are working without any 'Manager'.

Answer:

(Query)

```
SELECT Deptno, Dept_Name FROM  
Department WHERE Dept_Manager_No  
IS NULL;
```

Output:-

Deptno	Dept-Name
1	Hadia Soft Tech Lab
5	Hadia Soft Head Office

(e) Find the names of those employees which Names are not starting with character 'A', 'U' and 'S'.

Answer:

(Query)

```
SELECT Eno, Ename FROM Employee WHERE  
NOT (E-Name LIKE 'A%' OR E-Name  
LIKE 'U%' OR E-Name LIKE 'S%');
```

(Alternative Method)

```
SELECT Eno, EName FROM Employee  
WHERE NOT E-Name REGEXP '[AUS]';
```

Output:-

Eno	E-Name
101	Zann
103	Tauseef
105	Muneeb
107	Dawood

PAST PAPER 2021

SHORT ANSWERS

Q-4

SCHEMA:-

Emp (Empno, Ename, Job, Sal,  
Hiredate, Comm, Mgr, Deptno)

Empl:	Empno	Ename	Job	Sal	Hiredate	Comm	Mgr	Deptno
	100	Ali	President	12000	2003-02-10	3000	1	
	101	Zain	Head Executive	11500	2003-02-15	3000	100	1
	103	Tauseef	HR Manager	11700	2003-02-20	3000	100	20
	104	Muneeb	Finance Manager	11000	2003-02-12	3000	100	2
	105	Dawood	Inter Services	11500	2003-02-14	2500	100	10
	200	Ajmal	Clerk	3500	2010-10-23	400	100	1
	201	Akmal	Clerk	4200	2010-10-23	200	101	1
	205	Farooq	Salesman	5500	2012-05-19	1000	103	10
	300	Zubair	Customer Service	3500	2012-10-18	300	105	10

Dept (Deptno, DName, Loc)

Dept:

Deptno	DName	Loc
1	Head Office	Lahore
2	Accounts Office	Lahore
10	Customer Support	Karachi
20	Human Resources	Islamabad

(a) List all Clerks with Sal between 4000 and 6000.

Answer:

(Query)

SELECT Empno, Ename, Job FROM EMP

WHERE Sal BETWEEN 4000 AND 6000

AND Job = 'Clerk';

Output:-

Empno	Ename	Job
201	Akmal	Clerk

(b) How many Salesman are working in the organization?

Answer:

(Query)

```
SELECT COUNT(JOB) AS 'No. of Salesman'  
FROM EMP WHERE Job='Salesman';
```

Output:-

No. of Salesman
1

(c) Display (Empno, Ename, Job, Salary,  
Deptno, Deptname)

Answer:

(Query)

```
SELECT a.Empno, a.Ename, a.Job, a.Sal,  
a.Deptno, b.DName FROM EMP a  
INNER JOIN Dept b ON a.Deptno  
= b.Deptno;
```

Output:-

Empno	Ename	Job	Sal	Deptno	DName
100	Ali	President	12000	1	Head Office
101	Zann	Head Executive	11500	1	Head Office
200	Ajmal	Clerk	3500	1	Head Office
201	Akmal	Clerk	4200	1	Head Office
104	Muneeb	Finance Manager	11000	2	Accounts Office
105	Dawood	Inter Services	11500	10	Customer Support
205	Farooq	Salesman	5500	10	Customer Support
300	Zubair	Customer Services	3500	10	Customer Support
103	Tauseef	HR Manager	11700	20	Human Resources

(d) Name of employees getting maximum salary.

Answers

(Query)

```
SELECT Empno, Ename, Sal FROM EMP  
WHERE Sal = (SELECT Max(Sal) FROM EMP);
```

Output:-

Empno	Ename	Sal
100	Ali	12000

(e) List the average salary of each job for deptno 10 or 20 for the jobs with average salary greater than 1500. Sort the output with respect to average salary.

Answer:

(Query)

```
SELECT Job, AVG(Sal) AS 'Average Salary' FROM EMP WHERE Deptno IN (10,20) GROUP BY Job HAVING AVG(Sal)>1500;
```

Output:-

Job	Average Salary
Inter Services	11500
Salesman	5500
Customer Services	3500
HR Manager	11700