Descriptive *SQL Ch:04*

1. What is group function? Give some types of group functions.

Group function is nothing but multiple row function. It operates on sets of rows to give one result per group. avg, count, max, min, stddev, sum, variance etc.

2. How can we find those total salary, average salary, maximum salary, minimum salary whose job_id contains 'REP' from the 4th character?

Ans:

```
Select sum(salary),avg(salary),max(salary),min(salary)from
employees where substr(job_id,4)='REP';
```

Output:

```
SUM(SALARY) AVG(SALARY) MAX(SALARY) MIN(SALARY)
----------- ----------- ----------- -----------
     273000  8272.72727       11500        6000
```

3. How can we count the number of employees whose department number is 100?

Ans:

```
Select count(*) from employees where department_id=100;
```

Output:

```
  COUNT(*)
----------
         6
```

4. What is the difference between "where" clause and "having" clause?

Ans: "where" clause is used to restrict on single row function and "having" clause is used to restrict on multiple row function. Without "group by...." Clause having clause cannot be used but without "group by...." Where clause can be used.

5. Write the general sequence of the clauses of sql?

Ans: select....,from.....,where.....,group by.....,having.....,order by......;

6. What do you mean by "group by...." and "order by....." in sql ?

Ans: "group by....." means to show the result group-wise and "order by......" indicates the sequence of the result.

7. How can we use and a single function and group function together?

Ans:

```
select department_id,sum(salary)from employees where
department_id in (50,80,100)group by department_id
```

Output:

```
DEPARTMENT_ID SUM(SALARY)
------------- -----------
          100       51600
```

```
        50        156400
        80        304500
```

8. How can we the job_id and total salary of all employees whose job number contains "REP" and and according to job_id total salary of the employees is greater than 13000.

Ans: `select job_id, sum(salary) from employees where job_id not like '%REP%'group by job_id having sum(salary)>13000 order by sum(salary)`

Output:

```
JOB_ID      SUM(SALARY)
---------- -----------
PU_CLERK         13900
AD_PRES          24000
IT_PROG          28800
AD_VP            34000
```

9. How can we use nested group function?

Ans: `select max(sum(salary)) from employees`
`      group by department_id;`

Output:
```
MAX(SUM(SALARY))
----------------
          304500
```

N.B: `Without "group by....) clause a group function cannot be nested.`

10. Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is $6000 or less. Sort the output in descending order of salary.

Ans: `select manager_id, min(salary) from employees where manager is not null group by manager_id having min(salary)>6000 order by min(salary) desc;`

10. Create a query that will display the total number of employees and of that total, the number of employees hired in 1995, 1996, 1997 and 1998. Create appropriate column headings.

Ans: `select count(*) total,`
`sum(decode(to_char(hire_date, 'yyy'),1995,1,0))"1995),`
`sum(decode(to_char(hire_date, 'yyy'),1996,1,0))"1996),`
`sum(decode(to_char(hire_date, 'yyy'),1997,1,0))"1997),`
`sum(decode(to_char(hire_date, 'yyy'),1998,1,0))"1998)`
`from employees;`