SUBQUERIES TO SOLVE QUERIES QUESTIONS

1. Which of the following are the types of sub-queries?

A. Ordered sub-queries
B. Grouped sub-queries
C. Single row sub-queries
D. None of the above

2.Which of the following is true about sub-queries?

A. They execute after the main query executes
B. They execute in parallel to the main query
C. The user can execute the main query and then, if wanted, execute the sub-query
D. They execute before the main query executes.

3.Which of the following is true about the result of a sub-query?

A. The result of a sub-query is generally ignored when executed.
B. The result of a sub-query doesn't give a result, it is just helpful in speeding up the main query execution
C. The result of a sub-query is used by the main query.
D. The result of a sub-query is always NULL

4.Which of the following clause is mandatorily used in a sub-query?

A. SELECT
B. WHERE
C. ORDER BY
D. GROUP BY

5. Which of the following is a method for writing a sub-query in a main query?

A. By using JOINS
B. By using WHERE clause
C. By using the GROUP BY clause
D. By writing a SELECT statement embedded in the clause of another SELECT statement

6.In the given scenarios, which one would appropriately justify the usage of sub-query?

A. When we need to sum up values
B. When we need to convert character values into date or number values
C. When we need to select rows from a table with a condition that depends on the data from the same or different table.
D. None of the above

7.In which of the following clauses can a sub-query be used?

A. HAVING
B. WHERE
C. FROM
D. All of the above

8.Which of the following single-row operators can be used for writing a sub-query?

A. >=
B. <
C. =
D. All of the above

9.Which of the following multi-row operators can be used with a sub-query?

A. IN
B. ANY
C. ALL
D. All of the above

10.What is true about the output obtained from a sub-query?

A. It remains in the buffer cache
B. It remains inside the sub-query and can be used later when needed
C. It is used to complete the outer *main* query
D. Both A and C

11.You need to find the salaries for all the employees who have a higher salary than the Vice President of a company 'ABC'.Which of the following queries will give you the required result?
Considerthetablestructureasgiven

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------                                    -------- -----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT           NUMBER(2,2)
 MANAGER_ID           NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
  SELECT first_name, last_name, salary
FROM employees
WHERE salary > (SELECT salary
FROM employees
WHERE job_id = 'VICE-PRESIDENT');
```

```
SELECT first_name, last_name, salary
FROM employees
WHERE salary = (SELECT salary
FROM employees
WHERE job_id = 'VICE-PRESIDENT');
```

```
SELECT first_name, last_name, salary
FROM employees
WHERE job_id = 'VICE-PRESIDENT');
```

D. None of the above

12.What among the following is true about sub-queries?

A. Sub-queries can be written on either side of a comparison operator

B. Parenthesis is not mandatory for sub-queries

C. Single-row sub-queries can use multi-row operators but vice versa is not possible

D. All of the above

13. What will be the outcome of the following query? *Considerthegiventablestructure*

```
SQL> DESC employees
 Name       Null?        Type
 ----------------------                                   -------- -----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT           NUMBER(2,2)
 MANAGER_ID           NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
SELECT first_name, last_name, salary
FROM employees
WHERE salary ANY (SELECT salary FROM employees);
```

A. It executes successfully giving the desired results
B. It executes successfully but does not give the desired results
C. It throws an ORA error
D. It executes successfully and gives two values for each row obtained in the result set

14.Which of the following is true about single-row sub-queries?

A. They give one result from the main query
B. They give only one row in the result set
C. They return only one row from the inner SELECT statement
D. They give multiple rows from the main *outer* query

15.What is true about multi-row sub-queries?

A. They can return more than one column as the result of the inner query
B. They return multiple rows in the main query but only a single result set in the inner query
C. They return single row in the main query but multiple rows in the inner sub-query
D. They return more than one row from the inner SELECT statement

16.What among the following is true about single-row sub-queries?

A. They return only one row
B. They use single-row operators
C. Both A and B
D. None of the above

17.Which of the following operators cannot be used in a sub-query?

A. AND
B. <
C. >
D. <>

Examine the exhibit and answer the questions 18 to 21 that follow.

EMPLOYEES		
Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE

18.You need to find out the names of all employees who belong to the same department as the employee 'Jessica Butcher' who is in department 100 and has an employee ID 40. Which of the following queries will be correct?

```
SELECT first_name, last_name
FROM employees
WHERE last_name = 'Butcher'
And first_name = 'Jessica';
```

```
SELECT first_name, last_name
FROM employees
WHERE department =100;
```

```
SELECT first_name, last_name
FROM employees
WHERE department     = (SELECT department
FROM employees
WHERE first_name = 'Jessica'
AND last_name = 'Butcher');
```

```
SELECT first_name, last_name
FROM employees
WHERE department     = (SELECT department
FROM employees
WHERE first_name = 'Jessica'
AND last_name = 'Butcher'
AND department = 100
AND employee_id = 40);
```

19.You need to find out the employees which belong to the department of 'Jessica Butcher' and have salary greater than the salary of 'Jessica Butcher' who has an employee ID of 40. Which of the following queries will work?

```
SELECT first_name, last_name
FROM employees
WHERE last_name = 'Butcher'
AND first_name = 'Jessica'
AND salary > 10000;
```

```
SELECT first_name, last_name
FROM employees
WHERE department = 100;
```

```
SELECT first_name, last_name
FROM employees
WHERE department = (SELECT department
    FROM employees
    WHERE first_name = 'Jessica'
    AND last_name = 'Butcher'
```

```
      AND employee_id = 40)
AND salary > (SELECT salary
        FROM employees
        WHERE first_name = 'Jessica'
        AND last_name = 'Butcher'
        AND employee_id = 40);
```

```
SELECT first_name, last_name
FROM employees
WHERE department     = (SELECT department
      FROM employees
      WHERE first_name = 'Jessica'
      AND last_name = 'Butcher'
      AND department = 100);
```

20.Based on the answers for questions 18th and 19th, what type of sub-queries is used by them?

A. Single row sub-query

B. Multiple row sub-query

C. Both A and B

D. Inline sub-query

21.Consider two statements about outer and inner queries in context of SQL sub-queries?

i. The inner queries can get data from only one table

ii. The inner queries can get data from more than one table Which

of the above statements are true?

A. *i*

B. *ii*

C. Both *i* and *ii*

D. Neither *i* nor *ii*

Examine the table structure as follows and answer the questions 22 to 27 that follow:

```
SQL> DESC employees
 Name       Null?        Type
 ------------------------                                  -------- -----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME      NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE      NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

22.What will be the outcome of the following query? *Choosethemostappropriateanswer*

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------                                  -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER        VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
SELECT last_name, job_id, salary
FROM employees
WHERE salary = (SELECT max(salary)
FROM employees);
```

A. It executes successfully and gives the employees who have salaries equal to the max salary.

B. It executes successfully but does not give the required results

C. It throws an error as a group function is used in the sub-query

D. It throws an error as a single row sub-query should contain a multi-row operator

23.What will be the outcome of the query that follows?

```
SELECT first_name, last_name, min(salary)
FROM employees
GROUP BY department_id
HAVING MIN(salary) >
   (SELECT min(salary)
   FROM employees
   WHERE department_id = 100);
```

A. It executes successfully and gives the names and minimum salary greater than department 100 of all employees

B. It executes successfully and gives the salaries of the employees in department 100

C. It executes successfully and gives the names and minimum salaries of all the employees.

D. It throws an error.

24.You need to find the job which has a maximum average salary.Which of the following queries will give you the required results?

```
SELECT job_id, avg(salary)
FROM employees
GROUP BY job_id;
```

```
SELECT job_id, avg(salary)
FROM employees
GROUP BY job_id
HAVING job_id in (SELECT max(avg(salary) FROM employees);
```

```
SELECT job_id, avg(salary)
FROM employees
GROUP BY job_id
HAVING max(avg(salary) in (SELECT max(avg(salary) FROM employees);
```

```
SELECT job_id, avg(salary)
FROM employees
GROUP BY job_id
HAVING avg(salary) in (SELECT max(avg(salary) FROM employees GROUP BY job_id);
```

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

```
SELECT first_name, last_name
FROM employees
WHERE commission_pct      = (SELECT min(commission_pct )
                  FROM employees
                  GROUP BY department_id);
```

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

26.Consider the query given below.How many records will be returned as a result of the above query? ***Assumingthenoemployeewithjobid'XX'existsinthecompany***

```
SELECT first_name, last_name
FROM employees
WHERE salary = (SELECT salary
   FROM employees
   WHERE job_id = 'XX');
```

A. 1

B. NULL

C. 0

D. The query raises ORA error because sub-query is invalid.

27.What happens if the WHERE condition in the query given in question 26 is replaced with a new one ***WHEREjobidISNOTNULL*****?** ***Assumethenumberofrecordsin'employees'tableis*****14.**

A. 1

B. 14

C. 0

D. ORA error

28.Which of the following are valid multi row operators used for sub-queries?

A. <=

B. ANY >=

C. !=

D. >=

Examine the table structure as given. Consider the query given below and answer the questions 29 to 33 that follow

```
SQL> DESC employees
 Name        Null?       Type
 ----------------------                                  -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME      NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE      NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY          NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)


SELECT first_name, last_name, salary, commission_pct
FROM employees
WHERE salary < ANY      (SELECT salary
   FROM employees
   WHERE department_id      = 100)
AND department_id       <> 101;
```

29.What does the ANY operator evaluates to in the above query?

A. TRUE

B. FALSE

C. NULL

D. 0

30.What will be the outcome of the query if we assume that the department 100 has only one employee?

A. It executes successfully giving the one result

B. It executes successfully giving salaries of all the employees

C. NULL

D. It throws an ORA error

31.What will be the outcome of the query given above if the < ANY operator is replaced with = ANY operator?

A. Oracle will treat each value of the salary returned from the sub-query as it does with IN operator

B. There will be no difference in the results

C. The results will differ

D. The execution will thrown an ORA error

32.What can be said about the < ANY operator in the query given above?

A. It gives the maximum value of salary

B. It gives the minimum value of salary

C. It means it gives the values that are lesser than the highest

D. None of the above

33.Assume that the < ANY operator is replaced with the > ANY. What is true about this operator?

A. It gives the maximum salary

B. It finds only the maximum salary from the sub-query

C. It gives more than the minimum salary

D. It gives the minimum salary

34. Examine the given table structure and consider the following query:

```
SQL> DESC employees
 Name        Null?       Type
 ----------------------                                  -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME      NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE      NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY          NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID       NUMBER(4)
```

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary IN (SELECT max(salary)
   FROM employees
   GROUP BY department_id );
```

Which WHERE clause among the following is equivalent to that given in the above query?
*Assumethatthesalariesare*2500, 3000, 3500, 4000

```
        WHERE salary < ANY (SELECT max(salary)
```

```
      FROM employees
      GROUP BY department_id );

WHERE salary < ALL (SELECT max(salary)
      FROM employees
      GROUP BY department_id );

WHERE salary = (SELECT max(salary)
      FROM employees
      GROUP BY department_id );

WHERE salary IN (2500,3000,3500,4000);
```

Examine the structure of the EMPLOYEES table as given below and answer the questions 35 to 37 that follow.

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------                                    -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME      NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE      NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

<

35. You need to find out which of the employees have a salary less than that of the salary for the job ID 'FIN_ACT'. Which of the following queries will give you the required output?

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary < ALL
   (SELECT salary
     FROM employees
     WHERE job_id = 'FIN_ACT')
     AND job_id <> 'FIN_ACT';

SELECT employee_id, first_name, last_name
FROM employees
WHERE salary > ALL
   (SELECT salary
   FROM employees
   WHERE job_id = 'FIN_ACT')
   AND job_id <> 'FIN_ACT';

SELECT employee_id, first_name, last_name
FROM employees
WHERE salary < ANY
   (SELECT salary
   FROM employees
   WHERE job_id = 'FIN_ACT')
   AND job_id <> 'FIN_ACT';
```

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary =      (SELECT salary
   FROM employees
   WHERE job_id = 'FIN_ACT')
   AND job_id <> 'FIN_ACT';
```

36.What will be the outcome of the above query *theoptionAinthequestionabove*, if the < ALL is replaced with the >ALL?

A. It will execute successfully giving the same result.

B. It will throw an ORA error

C. It will execute successfully but give the employees' details who have salaries lesser than all the employees with job_id 'FI_ACCOUNTANT'.

D. None of the above

37.You need to find the salaries for all employees who are not in the department 100. Which of the following queries will give you the required result?

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary !=ALL
   (SELECT salary
   FROM employees
   WHERE department_id      = 100)
   AND department_id       <> 100;
```

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary NOT IN
   (SELECT salary
   FROM employees
   WHERE department_id      = 100)
   AND department_id       <> 100;
```

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary NOT ALL
   (SELECT salary
   FROM employees
   WHERE department_id      = 100)
   AND department_id       <> 100;
```

```
SELECT employee_id, first_name, last_name
FROM employees
WHERE salary != (SELECT salary
   FROM employees
   WHERE department_id      = 100)
   AND department_id       <> 100;
```

Examine the table structure as given. Consider the following query and answer the questions 38 and 39 that follow. You need to find the employees who do not have a sub-ordinate reporting to them. *Assumethereare0expectedresults*

```
SQL> DESC employees
 Name        Null?       Type
 ----------------------                                  -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY          NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
SELECT first_name, last_name
FROM employees
WHERE employee_id NOT IN
   (SELECT manager_id
   FROM employees);
```

38.What will be the result of the query given above?

A. 10

B. NULL

C. ORA error

D. 0

39.Which of the following WHERE clauses should be added / modified to the above query to give the expected results?

```
WHERE employee_id != (SELECT manager_id FROM employees);
```

```
WHERE employee_id IN (SELECT manager_id FROM employees);
```

```
WHERE employee_id <>ALL (SELECT manager_id FROM employees);
```

```
WHERE employee_id NOT IN (SELECT manager_id
     FROM employees
     WHERE manager_id is NOT NULL);
```

40.What is true about sub-queries in general?

A. Sub-queries have to be executed separately from the main queries

B. Sub-queries can be executed at the will of the user, they are not related to the main query execution

C. Sub-queries are equal to two sequential queries where the results of inner query are used by the main query

D. All of the above

41. Which of the following is true about sub-queries?

A. A sub-query can return 0 or more rows

B. A sub-query can be used only in the SELECT clause

C. Nesting of sub-queries is limited to 2 levels

D. Group functions cannot be used in sub-queries

42. Examine the table structure as given.

```
SQL> DESC employees
 Name        Null?        Type
 ----------------------- -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL        NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)

 HIRE_DATE       NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID           NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

Consider the following query.

```
SELECT first_name, last_name
FROM employees
WHERE employee_id NOT IN
   (SELECT manager_id, hire_date
   FROM employees
   WHERE manager_id is not null);
```

This query returns an error. What is the reason for error?

A. The NOT IN operator used is invalid

B. The WHERE clause in the sub-query is incorrectly written

C. The column in the sub-query SELECT clause should only be one when there's an inequality used in the main query

D. The sub-query uses the same table as the main query

43.A report has to be extracted which displays all the departments that have one or more employees assigned to them. Which of the following queries will give the required output?
Considerthetablestructureasgiven

```
SQL> DESC employees
 Name        Null?        Type
 ----------------------- -------- ----------------
 EMPLOYEE_ID    NOT NULL NUMBER(6)
 FIRST_NAME         VARCHAR2(20)
 LAST_NAME    NOT NULL VARCHAR2(25)
 EMAIL        NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
```

```
HIRE_DATE     NOT NULL DATE
JOB_ID        NOT NULL VARCHAR2(10)
SALARY            NUMBER(8,2)
COMMISSION_PCT          NUMBER(2,2)
MANAGER_ID            NUMBER(6)
DEPARTMENT_ID       NUMBER(4)
```

```
SELECT department_name
FROM employees
WHERE department_id       IN (SELECT distinct (department_id )
     FROM employees);
```

```
SELECT department_name
FROM employees
WHERE department_id       ANY (SELECT distinct (department_id )
     FROM employees);
```

```
SELECT department_name
FROM employees
WHERE department_id       < ANY (SELECT distinct (department_id )
     FROM employees);
```

```
SELECT department_name
FROM employees
WHERE department_id       = ANY (SELECT distinct (department_id )
     FROM employees);
```

44.What is the maximum level of sub-queries allowed in Oracle in a single SQL statement?

A. 20

B. 50

C. Unlimited

D. 255

45. What should be the best practice to follow when we know what values we need to pass on to the main query in Oracle queries?

A. Using GROUP BY

B. Using sub-queries

C. Using HAVING

D. None of the above

Examine the table structure as given. Consider the following query and answer the questions 46 and 47 that follow:

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------- -------- ----------------
EMPLOYEE_ID    NOT NULL NUMBER(6)
FIRST_NAME         VARCHAR2(20)
LAST_NAME    NOT NULL VARCHAR2(25)
EMAIL        NOT NULL VARCHAR2(25)
```

```
PHONE_NUMBER      VARCHAR2(20)
HIRE_DATE     NOT NULL DATE
JOB_ID        NOT NULL VARCHAR2(10)
SALARY          NUMBER(8,2)
COMMISSION_PCT        NUMBER(2,2)
MANAGER_ID          NUMBER(6)
DEPARTMENT_ID       NUMBER(4)
```

```
SELECT employee_id, first_name, last_name, job_id
FROM employees
WHERE job_id = (SELECT job_id FROM employees);
```

46.You need to find all the employees whose job ID is the same as that of an employee with ID as 210. Which of the following WHERE clauses would you add / modify to achieve this result? (Consider the table structure as given

```
WHERE job_id = (SELECT job_id FROM employees WHERE employee_id = 210);
```

```
WHERE job_id IN (SELECT job_id FROM employees WHERE employee_id = 210);
```

```
WHERE job_id > (SELECT job_id FROM employees WHERE employee_id = 210);
```

```
WHERE job_id >= (SELECT job_id FROM employees WHERE employee_id = 210);
```

Answer: A.

47.Assume that you change the WHERE clause as given in the option A in question 46 as the following.

```
WHERE job_id = (SELECT job_id FROM employees WHERE employee_id < 210);
```

What will be the outcome of this change?

A. The results will be the same
B. ORA error thrown on execution
C. The results will differ
D. The query will execute successfully giving 0 rows.

48.Examine the table structures as shown in the exhibit below.

EMPLOYEES		
Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE
SALARY	NOT NULL	NUMBER
COMM_PCT		NUMBER(7,2)
DEPT_ID		NUMBER(2)
GRADE		
Name	Null?	Type
GRADE		NUMBER
LOSAL		NUMBER

You need to display the names of the employees who have the highest salary. Which of the following SQL statements will be correct?

```
SELECT first_name, last_name, grade
FROM employees, grade
WHERE (SELECT max (salary) FROM employees) BETWEEN losal and hisal;


SELECT first_name, last_name, grade
FROM employees, grade
WHERE (SELECT max (salary) FROM employees) BETWEEN losal and hisal
AND salary BETWEEN losal and hisal;


SELECT first_name, last_name, grade
FROM employees, grade
WHERE salary = (SELECT max (salary) FROM employees)
AND salary BETWEEN losal and hisal;


SELECT first_name, last_name, grade
FROM employees, grade
WHERE salary IN (SELECT max (salary) FROM employees)
AND max(salary) BETWEEN losal and hisal;
```

49.What is the sub-query in the FROM clause of an SQL statement?
Choosethemostappropriateanswer

A. Single row sub-query
B. Multi row sub-query
C. Inline View
D. Co-related sub-query

50.What is the maximum number of nesting level allowed in an Inline View type sub-query?

A. 255
B. 300
C. 216
D. Unlimited

51.What is true about co-related sub-queries?

A. The tables used in the main query are also used in a co-related sub-query
B. The sub-queries which reference a column used in the main query are called co-related sub-queries
C. The sub-queries which are written without parenthesis are called co-related sub-queries
D. The sub-queries which mandatorily use different tables than those used in the main query are called co-related sub-queries

52.Which of the following statements cannot be parent statements for a sub-query?

A. SELECT
B. GROUP BY
C. UPDATE
D. DELETE

53.What is true about a co-related sub-query?

A. It is evaluated only once for the parent query

B. It is evaluated only thrice for the parent query

C. It is evaluated once for each row processed by the parent sub-query

D. All of the above

54.Examine the given table structure. You need to write a query which returns the names of the employees whose salaries exceed their respective department's average salary. Which of the following will work? *Choosethemostappropriateanswer*

```
SQL> DESC employees
 Name        Null?         Type
 ----------------------                                    -------- ----------------
EMPLOYEE_ID      NOT NULL NUMBER(6)
FIRST_NAME         VARCHAR2(20)
LAST_NAME       NOT NULL VARCHAR2(25)
EMAIL         NOT NULL VARCHAR2(25)
PHONE_NUMBER       VARCHAR2(20)
HIRE_DATE       NOT NULL DATE
JOB_ID         NOT NULL VARCHAR2(10)
SALARY          NUMBER(8,2)
COMMISSION_PCT          NUMBER(2,2)
MANAGER_ID         NUMBER(6)
DEPARTMENT_ID        NUMBER(4)
```

```
SELECT employee_id, first_name, last_name
FROM employees e
WHERE salary > (SELECT avg (salary)
   FROM employees
   WHERE e.department_id       = department_id )
   ORDER BY department_id ;
```

```
SELECT employee_id, first_name, last_name
FROM employees e
WHERE salary > ANY (SELECT avg(salary)
   FROM employees
   WHERE e.department_id       = department_id )
   ORDER BY department_id ;
```

```
SELECT employee_id, first_name, last_name
FROM employees e
WHERE salary = (SELECT avg(salary)
   FROM employees
   WHERE e.department_id       = department_id )
   ORDER BY department_id ;
```

```
SELECT employee_id, first_name, last_name
FROM employees e
WHERE salary < ANY      (SELECT avg(salary)
   FROM employees
   WHERE e.department_id       = department_id )
   ORDER BY department_id ;
```

55.Examine the given table structure. Which of the following queries will display duplicate records in a table EMPLOYEES?

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------                                  -------- -----------------
EMPLOYEE_ID      NOT NULL NUMBER(6)
FIRST_NAME           VARCHAR2(20)
LAST_NAME      NOT NULL VARCHAR2(25)
EMAIL          NOT NULL VARCHAR2(25)
PHONE_NUMBER       VARCHAR2(20)
HIRE_DATE      NOT NULL DATE
JOB_ID         NOT NULL VARCHAR2(10)
SALARY           NUMBER(8,2)
COMMISSION_PCT           NUMBER(2,2)
MANAGER_ID           NUMBER(6)
DEPARTMENT_ID        NUMBER(4)
```

```
SELECT *
FROM employees E
WHERE exists (SELECT 1 FROM employees E1
   WHERE E.employee_id = E1.employee_id);
```

```
SELECT *
FROM employees E
WHERE exists (SELECT 1 FROM employees E1
   WHERE E.employee_id = E1.employee_id
   AND E.ROWID < E1.ROWID);
```

```
SELECT *
FROM employees E
WHERE exists (SELECT 1 FROM employees E1
   WHERE E.ROWID < E1.ROWID);
```

```
SELECT *
FROM employees E
WHERE = ANY (SELECT 1 FROM employees E1
   WHERE E.employee_id = E1.employee_id
   And E.ROWID < E1.ROWID);
```

Examine the structures for the tables DEPARTMENTS and EMPLOYEES and answer the questions 56 and 57 that follow.

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------- -------- ----------------
EMPLOYEE_ID    NOT NULL NUMBER(6)
FIRST_NAME         VARCHAR2(20)
LAST_NAME    NOT NULL VARCHAR2(25)
```

```
EMAIL        NOT NULL VARCHAR2(25)
PHONE_NUMBER      VARCHAR2(20)
HIRE_DATE     NOT NULL DATE
JOB_ID        NOT NULL VARCHAR2(10)
SALARY           NUMBER(8,2)
COMMISSION_PCT        NUMBER(2,2)
MANAGER_ID           NUMBER(6)
DEPARTMENT_ID        NUMBER(4)
```

```
SQL> DESC departments
 Name        Null?        Type
 ----------------------                    -------- -----------------
 DEPARTMENT_ID    NOT NULL NUMBER(4)
 DEPARTMENT_NAME     NOT NULL VARCHAR2(30)
 MANAGER_ID           NUMBER(6)
 LOCATION_ID          NUMBER(4)
```

56.Which of the following queries will display the system date and count of records in the DEPARTMENTS and EMPLOYEES table?

```
SELECT sysdate,
   (SELECT * FROM departments) dept_count,
   (SELECT * FROM employees) emp_count
FROM DUAL;
```

```
SELECT sysdate,
   (SELECT count(*) FROM departments) dept_count,
   (SELECT count(*) FROM employees) emp_count
FROM DUAL
GROUP BY department_id ;
```

```
SELECT sysdate,
   (SELECT * FROM departments) dept_count,
   (SELECT * FROM employees) emp_count
FROM DUAL
GROUP BY employee_id;
```

```
SELECT sysdate,
   (SELECT count(*) FROM departments) dept_count,
   (SELECT count(*) FROM employees) emp_count
FROM DUAL;
```

57.Which of the following queries will tell whether a given employee is a manager in a Company 'XYZ'?

```
SELECT employee_id, manager_id
FROM employees A
WHERE employee_id ANY (SELECT manager_id from employees B)
ORDER BY manager_id desc;
```

```
SELECT employee_id, manager_id
FROM employees A
WHERE employee_id < ALL (SELECT manager_id from employees B)
```

```
SELECT employee_id, manager_id
FROM employees A
WHERE employee_id IN (SELECT manager_id from employees B)
ORDER BY manager_id desc;
```

```
SELECT employee_id, manager_id
FROM employees A
WHERE employee_id in (SELECT manager_id from employees B)
GROUP BY department_id ;
```

Examine the exhibit and answer the question 58 that follows:

EMPLOYEES

Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE
SALARY	NOT NULL	NUMBER
COMM_PCT		NUMBER(7,2)
DEPT_ID		NUMBER(2)

DEPARTMENTS

Name	Null?	Type
DEPT_ID		NUMBER
DEPT_NAME		VARCHAR2(20)
DEPT_LOC		VARCHAR2(20)

LOCATIONS

Name	Null?	Type
LOC_ID		NUMBER
CITY		VARCHAR2(20)

58.Which of the following queries will give you maximum salary of an employee in a particular city?

```
SELECT max (salary), city
FROM
(SELECT salary, department_id , loc, city
FROM employees natural join departments natural join locations);
```

```
SELECT salary, city
FROM
(SELECT salary, department_id , loc, city
FROM employees natural join departments natural join locations);
```

```
SELECT max (salary), city
FROM
(SELECT salary, department_id , loc, city
FROM employees natural join departments natural join locations)
GROUP BY city;
```

```
SELECT max (avg(salary)), city
FROM
(SELECT salary, department_id , loc, city
FROM employees natural join departments natural join locations);
```

Examine the table structures as given below.

```
SQL> DESC employees
 Name        Null?          Type
 ----------------------                                    -------- ----------------
 EMPLOYEE_ID       NOT NULL NUMBER(6)
 FIRST_NAME          VARCHAR2(20)
 LAST_NAME     NOT NULL VARCHAR2(25)
 EMAIL         NOT NULL VARCHAR2(25)
 PHONE_NUMBER        VARCHAR2(20)
 HIRE_DATE     NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT           NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID         NUMBER(4)
```

```
SQL> DESC departments
 Name        Null?          Type
 ----------------------                                    -------- ----------------
 DEPARTMENT_ID     NOT NULL NUMBER(4)
 DEPARTMENT_NAME  NOT NULL VARCHAR2(30)
 MANAGER_ID          NUMBER(6)
 LOCATION_ID           NUMBER(4)
```

Consider the following query and answer the questions that 59 to 62 that follow.

```
SELECT   department_name
FROM departments d INNER JOIN employees e
ON (d.employee_id = e.employee_id)
GROUP BY department_name;
```

59.Which of the following queries can replace the above query by using sub-queries giving the same result?

```
SELECT department_name
FROM departments
WHERE department_id       = ANY (SELECT department_id          FROM employees);
```

```
SELECT department_name
FROM departments
WHERE department_id       IN (SELECT distinct(department_id ) FROM employees);
```

```
SELECT department_name
FROM departments
WHERE department_id       = (SELECT distinct(department_id ) FROM employees);
```

```
SELECT department_name
FROM departments
WHERE department_id       ANY (SELECT distinct(department_id ) FROM employees);
```

60.Assume that the sub-query as shown in the query given above is modified to the following.

```
(SELECT distinct (department_id ) FROM employees ORDER BY department_id );
```

What will be the outcome as a result of this change? *Choosethemostappropriateanswer*

A. It will order the department_id fetched from the sub-query and display them in ascending order

B. It will throw an ORA error as the ORDER BY clause should be accompanied by the GROUP BY clause

C. It will throw an ORA error because an ORDER BY clause cannot be used inside a sub-query

D. It will execute successfully.

61.Assume that the query given above is modified as the below one.

```
SELECT department_name
FROM departments
WHERE department_id      = ANY (SELECT department_id         FROM employees)
ORDER BY department_id       desc;
```

What will be the outcome as a result of this change? *Choosethemostappropriateanswer*

A. It will order the department_id fetched from the sub-query and display them in ascending order

B. It will order the department_id fetched from the sub-query and display them in descending order

C. It will throw an ORA error because an ORDER BY clause cannot be used inside a sub-query

D. None of the above

62.Which of the following can be used to order results in a sub-query?

A. ORDER BY

B. HAVING

C. GROUP BY

D. All of the above

Examine the exhibit below and answer the questions 63 to 65 that follow:

AUDIT		
Name	Null?	Type
AU_ID	NOT NULL	NUMBER(10)
AU_TITLE		VARCHAR2(20)
AU_DETAILS		CLOB

Consider the following query:

```
SELECT au_id, au_title
FROM audit
WHERE au_details in (SELECT au_details
      FROM audit
      WHERE au_title like 'S%')
      ORDER BY au_title;
```

63.What will be the outcome of the query given above?

A. It gives all AU_ID and AU_TITLEs starting with the letter 'S%'

B. It gives all AU_ID and AU_TITLEs starting with the letter 'S%' ordered by the titles in ascending order

C. It throws an ORA error

D. It returns a 0 value

64. What will be the outcome of the following query?

```
SELECT *
FROM employees
WHERE salary BETWEEN (SELECT max(salary)
    FROM employees
    WHERE department_id      = 100)
AND (SELECT min(salary) FROM employees where department_id              = 100);
```

This query returns an error. What is the reason for the error?

A. A GROUP BY clause should be used as the function MAX is used

B. Both the sub-queries cannot use the same department ID in the same outer query

C. BETWEEN operator cannot be used with a sub-query

D. SELECT clause should have columns mentioned and not a asterix *

65.What is true about using NOT IN when writing queries with sub-queries in them?

A. NOT IN ignores all the NULL values and gives only the NOT NULL values

B. NOT IN puts all the NULL values at the last and gives the NOT NULL to be displayed first

C. NOT IN should be not be used if a NULL value is expected in the result set

D. NOT IN is just a negation of the operator IN and can be changed without any caveat.

Consider the following table structures and answer the questions 66 to 72 that follow:

EMPLOYEES

Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE
SALARY	NOT NULL	NUMBER
COMM_PCT		NUMBER(7,2)
DEPT_ID		NUMBER(2)

DEPARTMENTS

Name	Null?	Type
DEPT_ID		NUMBER
DEPT_NAME		VARCHAR2(20)
DEPT_LOC		VARCHAR2(20)

66. You need to find out the names and IDs of the departments in which the least salary is greater than the highest salary in the department 10. Which of the following queries will give the required result.

```
SELECT department_id , min(salary)
FROM employees
GROUP BY department_id
HAVING min(salary) >
   (
   select max(salary)
   FROM employees
   where department_id         = 10
   )
```

```
SELECT department_id , min(salary)
FROM employees
GROUP BY department_id
HAVING min(salary) > ANY
   (
   select max(salary)
   FROM employees
   )
```

```
SELECT department_id , min(salary)
FROM employees
HAVING max(salary) < ANY
   (
   select min(salary)
   FROM employees
   where department_id         = 10
   )
```

```
SELECT department_id , min(salary)
FROM employees
GROUP BY department_id
HAVING min(salary) > ALL
   (
   select max(salary)
   FROM employees
   where department_id         = 10
   )
```

67.Write a query to find the employees whose salary is equal to the salary of at least one employee in department of id 10. *Choosethebestanswer*

```
SELECT employee_id, Salary
FROM employees
WHERE salary in
   (
   SELECT salary
   FROM employees
   where department_id         = 10
   )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary =ANY
   (
   SELECT salary
   FROM employees
   where department_id         = 10
   )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary ALL
```

```
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary     < ANY
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

68.You need to find out all the employees who have salary greater than at least one employee in the department 10. Which of the following queries will give you the required output?

```
SELECT employee_id, Salary
FROM employees
WHERE salary >= ANY
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary > ANY
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary < ANY
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary = ALL
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

69.You need to find out all the employees who have salary lesser than the salary of all the employees in the department 10. Which of the following queries will give you the required output?

```
SELECT employee_id, Salary
FROM employees
```

```
WHERE salary > ALL
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary =ALL
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary < ALL
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

```
SELECT employee_id, Salary
FROM employees
WHERE salary < ANY
    (
    SELECT salary
    FROM employees
    where department_id         = 10
    )
```

70.You need to find out all the employees who have their manager and department matching with the employee having an Employee ID of 121 or 200. Which of the following queries will give you the required output?

```
SELECT employee_id, manager_id,department_id FROM
employees
WHERE (manager_id,department_id ) = ANY
    (
    select manager_id,
    department_id
    FROM employees
    where employee_id in (121,200)
    )
```

```
SELECT employee_id, manager_id,department_id FROM
employees
WHERE (manager_id,department_id ) < ANY
    (
    select manager_id,
    department_id
    FROM employees
    where employee_id in (121,200)
    )
```

```
SELECT employee_id, manager_id,department_id FROM
employees
```

```
WHERE (manager_id,department_id ) > ANY
    (
    select manager_id,
    department_id
    FROM employees
    where employee_id in (121,200)
    )

SELECT employee_id, manager_id,department_id
FROM employees
WHERE (manager_id,department_id ) in
    (
    select manager_id,
    department_id
    FROM employees
    where employee_id in (121,200)
    )
```

71.You need to find the department name of an employee with employee ID 200. Which of the following queries will be correct? *Choosethemostappropriateanswer*

```
SELECT employee_id, first_name, last_name,department_id , (SELECT
department_name
FROM departments d, employees E
WHERE d.department_id       = e.department_id
And employee_id = 200
)
FROM employees e
```

```
SELECT employee_id, first_name, last_name,department_id ,
(SELECT department_ID
FROM departments d
WHERE d.department_id       = department_id
)
FROM employees e
WHERE employee_id = 200;
```

```
SELECT employee_id, first_name, last_name,department_id ,
(SELECT department_name
FROM departments d
WHERE d.department_id       = e.department_id
And employee_id = 200
)
FROM employees e
```

```
SELECT employee_id, first_name, last_name,department_id , (SELECT
department_name
FROM departments d,employee E
WHERE d.department_id       = e.department_id
)
FROM employees e
```

72.You need to find the highest earning employee with the job ID as 'SA_REP'. Which of the following queries will be correct? *Choosethemostappropriateanswer*

```
SELECT job_id, employee_id, Salary
FROM employees e
WHERE job_id     =
```

```
(
SELECT   distinct salary
FROM employees E1
WHERE E.job_id      = E1.job_id
AND E.salary <=       E1.salary
AND job_id      = 'SA_REP'
```

```
SELECT department_id , employee_id, Salary
FROM employees E
WHERE 1 =
(
SELECT   count(distinct salary)
FROM employees E1
WHERE E.job_id      = E1.job_id
AND E.salary <=       E1.salary
AND job_id      = 'SA_REP'
)
```

```
SELECT department_id , employee_id, Salary
FROM employees E
WHERE 0 =
(
SELECT   count(distinct salary)
FROM employees E1
WHERE E.job_id      = E1.job_id
AND E.salary =       E1.salary
AND job_id      = 'SA_REP'
)
```

```
SELECT department_id , employee_id, Salary
FROM employees E
WHERE 1 =
(
SELECT salary
FROM employees E1
WHERE E.job_id      < E1.job_id
AND E.salary <=       E1.salary
AND job_id      = 'SA_REP'
)
```

Consider the EMPLOYEES table structure as shown in the exhibit and answer the questions 73 to 77 that follow:

EMPLOYEES		
Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE
SALARY	NOT NULL	NUMBER
COMM_PCT		NUMBER(7,2)
DEPT_ID		NUMBER(2)

73.You need to find the job which has at least one employee in it. Which of the following queries will be correct? *Choosethemostappropriateanswer*

```
SELECT employee_id, Job_id
FROM employees E
WHERE exists
```

```
(
SELECT 1
FROM employees E1
WHERE E.job_id      = E1.job_id )

SELECT employee_id, Job_id
FROM employees E
WHERE exists
(
SELECT *
FROM employees E1
WHERE E.job_id      = E1.job_id )

SELECT employee_id, Job_id
FROM employees E
WHERE not exists
(
SELECT *
FROM employees E1
WHERE E.job_id      = E1.job_id )

SELECT employee_id, Job_id
FROM employees E
WHERE exists
(
SELECT 1
FROM employees E1
WHERE E.job_id      < E1.job_id )
```

74.You need to find the job which has no employees in it. Which of the following queries will be correct? *Choosethemostappropriateanswer*

```
SELECT employee_id, Job_id
FROM employees E
WHERE exists
(
SELECT *
FROM employees E1
WHERE E.job_id      = E1.job_id )
```

```
SELECT employee_id, Job_id
FROM employees E
WHERE not exists
(
SELECT 1
FROM employees E1
WHERE E.job_id      = E1.job_id )
```

```
SELECT employee_id, Job_id
FROM employees E
WHERE not exists
(
SELECT *
FROM employees E1
WHERE E.job_id      = E1.job_id )
```

```
SELECT employee_id, Job_id
FROM employees E
WHERE exists
```

```
(
SELECT 1
FROM employees E1
WHERE E.job_id      < E1.job_id )
```

75.You need to find the 3rd maximum salary from the EMPLOYEES table. Which of the following queries will give you the required results? *Choosethemostappropriateanswer*

```
SELECT *
FROM employees E
WHERE salary = (SELECT count(distinct salary )
   FROM employees
   WHERE e.salary = salary
   );
```

```
SELECT *
FROM employees E
WHERE 1 = (SELECT count(distinct salary )
   FROM employees
   WHERE e.salary < salary
   );
```

```
SELECT *
FROM employees E
WHERE 2 = (SELECT count(distinct salary )
   FROM employees
   WHERE e.salary >salary
   );
```

```
SELECT *
FROM employees E
WHERE 3 = (SELECT count(distinct salary )
   FROM employees
   WHERE e.salary <= salary
   );
```

76. You need to find the maximum salary by using the user input for getting the value of N. Which of the following queries will give you the required results? *Choosethemostappropriateanswer*

```
SELECT salary FROM
(
  SELECT rowid as user_sal
  FROM (SELECT distinct salary          from    employees ORDER BY salary        desc)
)
WHERE user_sal=&N ;
```

```
SELECT salary FROM
(
  SELECT rownum as user_sal
  FROM (SELECT distinct salary          FROM  employees          GROUP BY salary )
)
WHERE user_sal <= &N ;
```

```
SELECT salary FROM
(
  SELECT rownum as user_sal, salary          FROM (SELECT distinct salary          FROM employees
ORDER BY salary  desc)
)
WHERE user_sal=&N ;
```

```
SELECT salary FROM
(
  SELECT max(rownum) as user_sal, salary             FROM (SELECT distinct salary          FROM
employees        ORDER BY salary      desc)
)
WHERE user_sal=&N ;
```

77.What will happen if a value is provided to the &N variable in the above query *optionCinquestion*76 does not match with any row? *Choosethebestanswer*

A. The statement would throw an ORA error

B. The statement would return all the rows in the table

C. The statement would return NULL as the output result.

D. The statement would return no rows in the result.

78.What is the maximum level up to which Sub-queries can be nested?

A. 255

B. 100

C. 2

D. 16

79.What is true about the EXISTS operator in SQL queries with respect to sub-queries?

A. The columns selected in the sub-queries are important

B. The inner query's should return rows, any result is what is important, not what is SELECTED

C. Both A and B

D. Neither A nor B

80.What is true about the ANY operator used for sub-queries?

A. Returns rows that match all the values in a list/sub-query

B. Returns rows that match the first 5 values in a list/sub-query

C. Returns rows that match any value in a list/sub-query

D. Returns the value 0 when all the rows match in a list/sub-query

81.What is true about the ALL operator used for sub-queries? *Choosethemostappropriateanswer*.

A. Returns rows that match all the values in a list/sub-query

B. Returns rows that match only some values in a list/sub-query

C. Returns rows only if all the values match in a list/sub-query

D. All of the above

.

82.What is true about using sub-queries in INSERT statements in Oracle?

A. They can be used in the INSERT clause without any restriction

B. They can be used in the INSERT clause only for Numeric values

C. The SELECT list of a sub-query should be the same as the column list of the INSERT statement.

D. None of the above

Examine the table structures as given below and answer the questions 83 to 86 that follow.

```
SQL> DESC employees
 Name        Null?          Type
 ----------------------                                  -------- ----------------
 EMPLOYEE_ID       NOT NULL NUMBER(6)
 FIRST_NAME          VARCHAR2(20)
 LAST_NAME     NOT NULL VARCHAR2(25)
 EMAIL         NOT NULL VARCHAR2(25)
 PHONE_NUMBER        VARCHAR2(20)
 HIRE_DATE     NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY            NUMBER(8,2)
 COMMISSION_PCT            NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID         NUMBER(4)
```

```
SQL> DESC departments
 Name        Null?          Type
 ----------------------                                  -------- ----------------
 DEPARTMENT_ID     NOT NULL NUMBER(4)
 DEPARTMENT_NAME   NOT NULL VARCHAR2(30)
 MANAGER_ID          NUMBER(6)
 LOCATION_ID           NUMBER(4)
```

83.You need to find the details of all employees who were hired for the job ID 'SA_REP' in the month of June, 2013. Which of the following queries will give the required results?
Considerthetablestructureasgiven

```
SELECT first_name
FROM employees
WHERE employee_id      =
(   SELECT employee_id
  FROM employees
  WHERE to_char(hiredate, 'MM/YYYY')= '02/1981' AND
  job_id = 'SA_REP'
);
```

```
SELECT first_name
FROM employees
WHERE employee_id      = ANY
(   SELECT employee_id
  FROM employees
  WHERE to_char(hiredate, 'MM/YYYY')= '02/1981' AND
  job_id = 'SA_REP'
);
```

```
SELECT first_name
FROM employees
WHERE employee_id      ANY
(   SELECT employee_id
  FROM employees
```

```
  WHERE to_char(hiredate, 'MM/YYYY')= '02/1981'
  AND job_id       = 'SA_REP'
);


SELECT first_name
FROM employees
WHERE employee_id      exists
(   SELECT employee_id
  FROM employees
  WHERE to_char(hiredate, 'MM/YYYY')= '02/1981' AND
  job_id = 'SA_REP'
);
```

84.Which of the following statements are equivalent?

```
SELECT employee_id , salary
FROM employees
WHERE salary < ALL (SELECT salary FROM employees WHERE department_id=100);


SELECT employee_id , salary
FROM employees WHERE salary < (SELECT min(salary) FROM employees WHERE
department_id=100);


SELECT employee_id
FROM employees
WHERE salary not >= ANY (SELECT salary FROM employees WHERE department_id=100);
```

D. None of the above

85.Consider the following two queries:

Query 1:

```
SELECT first_name
FROM employees e join departments d
ON e.department_id         = d.department_id
WHERE department_name='ACCOUNTS';
```

Query 2:

```
SELECT first_name
FROM employees  e
WHERE department_id  = ANY (SELECT department_id                FROM departments d
   WHERE department_name='ACCOUNTS');
```

What can be said about the two statements?

A. Both the queries should generate the same result.

B. Both the queries will throw an error.

C. If there are two departments with the same name, both the queries will fail.

D. Both the queries will run successfully even if there is more than one department named 'ACCOUNTS'.

86.You need to display all the employees who have the highest salary in a department 100. You fire a query as below.

```
SELECT E.first_name, E.last_name , E.salary
FROM employees E
```

```
WHERE E.salary > ALL (SELECT E1.salary
        FROM employees E1
        WHERE E.department_id      =E1.department_id
        AND E.department_id        = 100);
```

What will be the outcome of the above query?

A. It executes successfully and gives the required results

B. It executes successfully but doesn't give the required output

C. It throws an ORA error on execution

D. It executes successfully and gives the required result when >ALL is replaced with >=ALL

Consider table structures as shown in the exhibit and answer the questions 87 to 89 that follow:

EMPLOYEES		
Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		VARCHAR2(4)
HIRE_DATE		DATE
SALARY	NOT NULL	NUMBER
COMM_PCT		NUMBER(7,2)
DEPT_ID		NUMBER(2)

DEPARTMENTS		
Name	Null?	Type
DEPT_ID		NUMBER
DEPT_NAME		VARCHAR2(20)
DEPT_LOC		VARCHAR2(20)

87.You need to fetch the first names *inareversealphabeticalorder* of all the employees in the department ID = 100 and who have the maximum salary in the JOB ID = 'SA_REP'. Which of the following queries will give the required output? *Choosethemostappropriateoutput*

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary =
   (SELECT max(salary)
   FROM employees E1
   WHERE E1.department_id       = 100
   GROUP BY job_id )
AND job_id      = 'SA_REP'
ORDER BY first_name;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary in
   (SELECT max(salary)
   FROM employees E1
   where E1.department_id          = 100)
ORDER BY first_name;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
```

```
WHERE salary IN
   (SELECT max(salary)
   FROM employees E1
   where job_id        = 'SA_REP'
   GROUP BY job_id )
AND WHERE E.department_id       = 100
ORDER BY first_name desc;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary IN
   (SELECT max(salary)
   FROM employees E1
   WHERE E1.department_id       = 100
   GROUP BY job_id )
ORDER BY first_name ;
```

88.In the queries given above *optionCisthecorrectanswer*, you need to display all the employees with the JOB ID 'SA_REP' who have the maximum salary in the department 100. Which of the following queries will give the required output?

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary IN
   (SELECT max(salary)
   FROM employees E1
   WHERE E1.department_id       = 100
   GROUP BY job_id )
AND job_id       = 'SA_REP'
ORDER BY first_name;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary in
   (SELECT max(salary)
   FROM employees E1
   WHERE E1.department_id       = 100)
ORDER BY first_name;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary in
   (SELECT max(salary)
   FROM employees E1
   WHERE job_id     = 'SA_REP'
   GROUP BY job_id )
And WHERE E.department_id       = 100
ORDER BY first_name desc;
```

```
SELECT E.first_name, job_id , salary
FROM employees E
WHERE salary in
   (SELECT max(salary)
   FROM employees E1
   WHERE E1.department_id       = 100
   GROUP BY job_id )
ORDER BY first_name ;
```

89.Select the query which will give you the maximum salary and maximum comm percentage. The query should also give the maximum comm percentage paid if the highest salaried employee gets the maximum comm percentage.

```
SELECT employee_id, max(salary), max(commission_pct )
FROM employees E
GROUP BY salary, commission_pct ;
```

```
SELECT employee_id, max(salary), max(commission_pct )
FROM employees E
GROUP BY salary;
```

```
SELECT employee_id, max(salary)
FROM employees E
GROUP BY salary, commission_pct
HAVING max(commission_pct ) = 100;
```

```
SELECT employee_id,
(SELECT max(salary) FROM employees) * (SELECT max(commission_pct ) FROM employees)
FROM DUAL;
```

90.What is true about the sub-queries used in the SELECT clause of an SQL statement?

A. These sub-queries are the same in all aspects as those used in the FROM or WHERE clauses

B. These sub-queries have to mandatorily be single row sub-queries

C. We can use multi row operators when writing such sub-queries

D. None of the above

91.What will be the outcome of the following query? *Considerthetablestructureasgiven*

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------- -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME          VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL        NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID        NOT NULL VARCHAR2(10)
 SALARY          NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)


SELECT sysdate,
(SELECT max(salary) FROM employees GROUP BY department_id )
FROM DUAL;
```

A. It gives the system date and the maximum salary for each department

B. It gives the maximum salary for all the departments

C. It throws an ORA error

D. It executes successfully with 0 rows

Examine the given table structure. Consider the following query and answer the

questions 92 to 95 that follow:

```
SQL> DESC employees
 Name        Null?       Type
 ----------------------                                  -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER        VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
SELECT salary
FROM employees
WHERE salary > ALL (10, 20, 30);
```

92.Which of the following queries are equivalent to the above query?

```
SELECT salary
FROM employees
WHERE salary >10 or salary > 20 and salary >30;
```

```
SELECT salary
FROM employees
WHERE salary <10 and salary < 20 and salary <30;
```

```
SELECT salary
FROM employees
WHERE salary >10 and salary > 20 and salary >30;
```

```
SELECT salary
FROM employees
WHERE salary >10 and salary > 20 or salary < 30;
```

93. If in the above query the list 10, 20, 30 is replaced by a sub-query, which of the following queries will give the required output for the department number 100?

```
SELECT E.salary
FROM employees E
WHERE E.salary > (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary >ALL (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary = (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
```

```
FROM employees E
WHERE E.salary >= (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

94.With respect to the question 14 above, what among the following will be an equivalent query if ALL has to be replaced with ANY?

```
SELECT E.salary
FROM employees E
WHERE NOT EXISTS (E.salary =ANY (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary >ANY (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary =ANY (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE NOT ( E.salary <= A.
zNB
.0NY (SELECT                                    E1.salary
FROM employees E1
WHERE E1.department_id       = 100));
```

95.With respect to the question 94, if the operator ANY is not to be used, which of the following queries will be correct?

```
SELECT E.salary
FROM employees E
WHERE NOT EXISTS (E.salary = ANY (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE NOT EXISTS (SELECT  E1.salary
FROM employees E1
WHERE E1.department_id       = 100
And E.salary <= E1.salary);
```

C. Either A or B

D. None of the above

Examine the given table structures. Consider the following query and answer the questions 96 to 98 that follow:

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------                                  -------- -----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME           VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL          NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID          NOT NULL VARCHAR2(10)
 SALARY           NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)
```

```
SELECT salary
FROM employees
WHERE salary > ANY (10, 20, 30);
```

96. Which of the following queries are equivalent to the above query?

```
SELECT salary
FROM employees
WHERE salary >10 or salary > 20 and or >30;
```

```
SELECT salary
FROM employees
WHERE salary <10 and salary < 20 and salary <30;
```

```
SELECT salary
FROM employees
WHERE salary >10 and salary > 20 or salary >30;
```

```
SELECT salary
FROM employees
WHERE salary >10 and salary > 20 or salary < 30;
```

97. In the above query, if the list 10, 20, 30 is replaced by a sub-query, which of the following queries will give the required output for the department number 100?

```
SELECT E.salary
FROM employees E
WHERE E.salary > (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary >ANY (SELECT      E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE E.salary = (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
```

```
WHERE E.salary >= (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

98.With respect to the question 97 above, what among the following will be an equivalent query if ANY is removed?

```
SELECT E.salary
FROM employees E
WHERE NOT EXISTS (E.salary =ANY (SELECT       E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

```
SELECT E.salary
FROM employees E
WHERE EXISTS (SELECT  E1.salary
FROM employees E1
WHERE E1.department_id       = 100
And E.salary >E1.salary);
```

```
SELECT E.salary
FROM employees E
WHERE EXISTS (SELECT  E1.salary
FROM employees E1
WHERE E1.department_id       = 100
);
```

```
SELECT E.salary
FROM employees E
WHERE IN (SELECT   E1.salary
FROM employees E1
WHERE E1.department_id       = 100);
```

99.Examine the given table structure. How many rows will get generated if the sub-query mentioned returns 0 rows?

```
SQL> DESC employees
 Name       Null?        Type
 ---------------------- -------- ----------------
 EMPLOYEE_ID      NOT NULL NUMBER(6)
 FIRST_NAME          VARCHAR2(20)
 LAST_NAME       NOT NULL VARCHAR2(25)
 EMAIL        NOT NULL VARCHAR2(25)
 PHONE_NUMBER       VARCHAR2(20)
 HIRE_DATE       NOT NULL DATE
 JOB_ID         NOT NULL VARCHAR2(10)
 SALARY          NUMBER(8,2)
 COMMISSION_PCT          NUMBER(2,2)
 MANAGER_ID          NUMBER(6)
 DEPARTMENT_ID        NUMBER(4)

SELECT E.salary
FROM employees E
WHERE E.salary > ANY ( select E1.salary FROM employees E1 where E1.department_id = 100);
```

A. 1 row

B. No rows

C. Either A or B

D. None of the above

100. A subquery must be placed in the outer query's HAVING clause if:

A. The inner query needs to reference the value returned to the outer query.

B. The value returned by the inner query is to be compared to grouped data in the outer query.

C. The subquery returns more than one value to the outer query.

D. None of the above. Subqueries can't be used in the outer query's HAVING clause.