SQL

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1. Which is the subset of SQL commands used to manipulate Oracle Database structures, including tables?

Data Definition Language (DDL)

2. What operator performs pattern matching?

LIKE operator

3. What operator tests column for the absence of data?

IS NULL operator

4. Which command executes the contents of a specified file?

START <filename> or @<filename>

5. What is the parameter substitution symbol used with INSERT INTO command?

&

6. Which command displays the SQL command in the SQL buffer, and then executes it?

RUN

7. What are the wildcards used for pattern matching?

_ for single character substitution and % for multi-character substitution

8. State true or false. EXISTS, SOME, ANY are operators in SQL.

True

9. State true or false. !=, <>, ^= all denote the same operation.

True

10. What are the privileges that can be granted on a table by a user to others?

Insert, update, delete, select, references, index, execute, alter, all

11. What command is used to get back the privileges offered by the GRANT command?

REVOKE

12. Which system tables contain information on privileges granted and privileges obtained?

USER_TAB_PRIVS_MADE, USER_TAB_PRIVS_RECD

13. Which system table contains information on constraints on all the tables created?
USER_CONSTRAINTS

14. *TRUNCATE TABLE EMP;*
DELETE FROM EMP;
Will the outputs of the above two commands differ?
Both will result in deleting all the rows in the table EMP.

15. What is the difference between TRUNCATE and DELETE commands?
TRUNCATE is a DDL command whereas DELETE is a DML command. Hence DELETE operation can be rolled back, but TRUNCATE operation cannot be rolled back. WHERE clause can be used with DELETE and not with TRUNCATE.

16. What command is used to create a table by copying the structure of another table?
Answer :
CREATE TABLE .. AS SELECT command
Explanation :
To copy only the structure, the WHERE clause of the SELECT command should contain a FALSE statement as in the following.
CREATE TABLE NEWTABLE AS SELECT * FROM EXISTINGTABLE WHERE 1=2;
If the WHERE condition is true, then all the rows or rows satisfying the condition will be copied to the new table.

17. What will be the output of the following query?
*SELECT REPLACE(TRANSLATE(LTRIM(RTRIM('!! ATHEN !!','!'), '!'), 'AN', '**'),'*','TROUBLE') FROM DUAL;*
TROUBLETHETROUBLE

18. What will be the output of the following query?
SELECT DECODE(TRANSLATE('A','1234567890','1111111111'), '1','YES', 'NO');
Answer :
NO
Explanation :
The query checks whether a given string is a numerical digit.

19. What does the following query do?
SELECT SAL + NVL(COMM,0) FROM EMP;
This displays the total salary of all employees. The null values in the commission column will be replaced by 0 and added to salary.

20. Which date function is used to find the difference between two dates?
MONTHS_BETWEEN

21. Why does the following command give a compilation error?
        DROP TABLE &TABLE_NAME;
        Variable names should start with an alphabet. Here the table name starts with an '&' symbol.

22. What is the advantage of specifying WITH GRANT OPTION in the GRANT command?
        The privilege receiver can further grant the privileges he/she has obtained from the owner to any other user.

23. What is the use of the DROP option in the ALTER TABLE command?
        It is used to drop constraints specified on the table.

24. What is the value of „comm" and „sal" after executing the following query if the initial value of „sal" is 10000?
        *UPDATE EMP SET SAL = SAL + 1000, COMM = SAL*0.1;*
        sal = 11000, comm = 1000

25. What is the use of DESC in SQL?
Answer :
        DESC has two purposes. It is used to describe a schema as well as to retrieve rows from table in descending order.
Explanation :
        The query SELECT * FROM EMP ORDER BY ENAME DESC will display the output sorted on ENAME in descending order.

26. What is the use of CASCADE CONSTRAINTS?
        When this clause is used with the DROP command, a parent table can be dropped even when a child table exists.

27. Which function is used to find the largest integer less than or equal to a specific value?
        FLOOR

28. What is the output of the following query?
        SELECT TRUNC(1234.5678,-2) FROM DUAL;
        1200

SQL – QUERIES

I. SCHEMAS

*Table 1 : **STUDIES***

PNAME (VARCHAR), SPLACE (VARCHAR), COURSE (VARCHAR), CCOST (NUMBER)

*Table 2 : **SOFTWARE***

PNAME (VARCHAR), TITLE (VARCHAR), DEVIN (VARCHAR), SCOST (NUMBER), DCOST (NUMBER), SOLD (NUMBER)

*Table 3 : **PROGRAMMER***

PNAME (VARCHAR), DOB (DATE), DOJ (DATE), SEX (CHAR), PROF1 (VARCHAR), PROF2 (VARCHAR), SAL (NUMBER)

LEGEND :

PNAME – Programmer Name, SPLACE – Study Place, CCOST – Course Cost, DEVIN – Developed in, SCOST – Software Cost, DCOST – Development Cost, PROF1 – Proficiency 1

QUERIES :

1. *Find out the selling cost average for packages developed in Oracle.*
2. *Display the names, ages and experience of all programmers.*
3. *Display the names of those who have done the PGDCA course.*
4. *What is the highest number of copies sold by a package?*
5. *Display the names and date of birth of all programmers born in April.*
6. *Display the lowest course fee.*
7. *How many programmers have done the DCA course.*
8. *How much revenue has been earned through the sale of packages developed in C.*
9. *Display the details of software developed by Rakesh.*
10. *How many programmers studied at Pentafour.*
11. *Display the details of packages whose sales crossed the 5000 mark.*
12. *Find out the number of copies which should be sold in order to recover the development cost of each package.*
13. *Display the details of packages for which the development cost has been recovered.*
14. *What is the price of costliest software developed in VB?*
15. *How many packages were developed in Oracle ?*
16. *How many programmers studied at PRAGATHI?*
17. *How many programmers paid 10000 to 15000 for the course?*
18. *What is the average course fee?*
19. *Display the details of programmers knowing C.*

20. *How many programmers know either C or Pascal?*
21. *How many programmers don"t know C and C++?*
22. *How old is the oldest male programmer?*
23. *What is the average age of female programmers?*
24. *Calculate the experience in years for each programmer and display along with their names in descending order.*
25. *Who are the programmers who celebrate their birthdays during the current month?*
26. *How many female programmers are there?*
27. *What are the languages known by the male programmers?*
28. *What is the average salary?*
29. *How many people draw 5000 to 7500?*
30. *Display the details of those who don"t know C, C++ or Pascal.*
31. *Display the costliest package developed by each programmer.*
32. *Produce the following output for all the male programmers*
    Programmer
    Mr. Arvind – has 15 years of experience

KEYS:

1. SELECT AVG(SCOST) FROM SOFTWARE WHERE DEVIN = 'ORACLE';
2. SELECT PNAME,TRUNC(MONTHS_BETWEEN(SYSDATE,DOB)/12) "AGE", TRUNC(MONTHS_BETWEEN(SYSDATE,DOJ)/12) "EXPERIENCE" FROM PROGRAMMER;
3. SELECT PNAME FROM STUDIES WHERE COURSE = 'PGDCA';
4. SELECT MAX(SOLD) FROM SOFTWARE;
5. SELECT PNAME, DOB FROM PROGRAMMER WHERE DOB LIKE '%APR%';
6. SELECT MIN(CCOST) FROM STUDIES;
7. SELECT COUNT(*) FROM STUDIES WHERE COURSE = 'DCA';
8. SELECT SUM(SCOST*SOLD-DCOST) FROM SOFTWARE GROUP BY DEVIN HAVING DEVIN = 'C';
9. SELECT * FROM SOFTWARE WHERE PNAME = 'RAKESH';
10. SELECT * FROM STUDIES WHERE SPLACE = 'PENTAFOUR';
11. SELECT * FROM SOFTWARE WHERE SCOST*SOLD-DCOST > 5000;
12. SELECT CEIL(DCOST/SCOST) FROM SOFTWARE;
13. SELECT * FROM SOFTWARE WHERE SCOST*SOLD >= DCOST;
14. SELECT MAX(SCOST) FROM SOFTWARE GROUP BY DEVIN HAVING DEVIN = 'VB';
15. SELECT COUNT(*) FROM SOFTWARE WHERE DEVIN = 'ORACLE';
16. SELECT COUNT(*) FROM STUDIES WHERE SPLACE = 'PRAGATHI';
17. SELECT COUNT(*) FROM STUDIES WHERE CCOST BETWEEN 10000 AND 15000;
18. SELECT AVG(CCOST) FROM STUDIES;
19. SELECT * FROM PROGRAMMER WHERE PROF1 = 'C' OR PROF2 = 'C';

20. SELECT * FROM PROGRAMMER WHERE PROF1 IN ('C','PASCAL') OR PROF2 IN ('C','PASCAL');
21. SELECT * FROM PROGRAMMER WHERE PROF1 NOT IN ('C','C++') AND PROF2 NOT IN ('C','C++');
22. SELECT TRUNC(MAX(MONTHS_BETWEEN(SYSDATE,DOB)/12)) FROM PROGRAMMER WHERE SEX = 'M';
23. SELECT TRUNC(AVG(MONTHS_BETWEEN(SYSDATE,DOB)/12)) FROM PROGRAMMER WHERE SEX = 'F';
24. SELECT PNAME, TRUNC(MONTHS_BETWEEN(SYSDATE,DOJ)/12) FROM PROGRAMMER ORDER BY PNAME DESC;
25. SELECT PNAME FROM PROGRAMMER WHERE TO_CHAR(DOB,'MON') = TO_CHAR(SYSDATE,'MON');
26. SELECT COUNT(*) FROM PROGRAMMER WHERE SEX = 'F';
27. SELECT DISTINCT(PROF1) FROM PROGRAMMER WHERE SEX = 'M';
28. SELECT AVG(SAL) FROM PROGRAMMER;
29. SELECT COUNT(*) FROM PROGRAMMER WHERE SAL BETWEEN 5000 AND 7500;
30. SELECT * FROM PROGRAMMER WHERE PROF1 NOT IN ('C','C++','PASCAL') AND PROF2 NOT IN ('C','C++','PASCAL');
31. SELECT PNAME,TITLE,SCOST FROM SOFTWARE WHERE SCOST IN (SELECT MAX(SCOST) FROM SOFTWARE GROUP BY PNAME);
32. SELECT 'Mr.' || PNAME || ' - has ' || TRUNC(MONTHS_BETWEEN(SYSDATE,DOJ)/12) || ' years of experience' ‒Programmer‖ FROM PROGRAMMER WHERE SEX = 'M' UNION SELECT 'Ms.' || PNAME || ' - has ' || TRUNC (MONTHS_BETWEEN (SYSDATE,DOJ)/12) || ' years of experience' ‒Programmer‖ FROM PROGRAMMER WHERE SEX = 'F';

II . SCHEMA :

Table 1 : **DEPT**

DEPTNO (NOT NULL , NUMBER(2)), DNAME (VARCHAR2(14)),
LOC (VARCHAR2(13)

Table 2 : **EMP**

EMPNO (NOT NULL , NUMBER(4)), ENAME (VARCHAR2(10)),
JOB (VARCHAR2(9)), MGR (NUMBER(4)), HIREDATE (DATE),
SAL (NUMBER(7,2)), COMM (NUMBER(7,2)), DEPTNO (NUMBER(2))

MGR is the empno of the employee whom the employee reports to. DEPTNO is a foreign key.
QUERIES

1. *List all the employees who have at least one person reporting to them.*
2. *List the employee details if and only if more than 10 employees are present in department no 10.*
3. *List the name of the employees with their immediate higher authority.*
4. *List all the employees who do not manage any one.*
5. *List the employee details whose salary is greater than the lowest salary of an employee belonging to deptno 20.*
6. *List the details of the employee earning more than the highest paid manager.*
7. *List the highest salary paid for each job.*
8. *Find the most recently hired employee in each department.*
9. *In which year did most people join the company? Display the year and the number of employees.*
10. *Which department has the highest annual remuneration bill?*
11. *Write a query to display a „*" against the row of the most recently hired employee.*
12. *Write a correlated sub-query to list out the employees who earn more than the average salary of their department.*
13. *Find the nth maximum salary.*
14. *Select the duplicate records (Records, which are inserted, that already exist) in the EMP table.*
15. *Write a query to list the length of service of the employees (of the form n years and m months).*

KEYS:

1. SELECT DISTINCT(A.ENAME) FROM EMP A, EMP B WHERE A.EMPNO = B.MGR;   or   SELECT ENAME FROM EMP WHERE EMPNO IN (SELECT MGR FROM EMP);
2. SELECT * FROM EMP WHERE DEPTNO IN (SELECT DEPTNO FROM EMP GROUP BY DEPTNO HAVING COUNT(EMPNO)>10 AND DEPTNO=10);
3. SELECT A.ENAME "EMPLOYEE", B.ENAME "REPORTS TO" FROM EMP A, EMP B WHERE A.MGR=B.EMPNO;
4. SELECT * FROM EMP WHERE EMPNO IN (SELECT EMPNO FROM EMP MINUS SELECT MGR FROM EMP);
5. SELECT * FROM EMP WHERE SAL > (SELECT MIN(SAL) FROM EMP GROUP BY DEPTNO HAVING DEPTNO=20);
6. SELECT * FROM EMP WHERE SAL > (SELECT MAX(SAL) FROM EMP GROUP BY JOB HAVING JOB = 'MANAGER');
7. SELECT JOB, MAX(SAL) FROM EMP GROUP BY JOB;
8. SELECT * FROM EMP WHERE (DEPTNO, HIREDATE) IN (SELECT DEPTNO, MAX(HIREDATE) FROM EMP GROUP BY DEPTNO);
9. SELECT TO_CHAR(HIREDATE,'YYYY') "YEAR", COUNT(EMPNO) "NO. OF EMPLOYEES" FROM EMP GROUP BY TO_CHAR(HIREDATE,'YYYY') HAVING COUNT(EMPNO) = (SELECT MAX(COUNT(EMPNO)) FROM EMP GROUP BY TO_CHAR(HIREDATE,'YYYY'));

10. SELECT DEPTNO, LPAD(SUM(12*(SAL+NVL(COMM,0))),15) "COMPENSATION" FROM EMP GROUP BY DEPTNO HAVING SUM(12*(SAL+NVL(COMM,0))) = (SELECT MAX(SUM(12*(SAL+NVL(COMM,0)))) FROM EMP GROUP BY DEPTNO);

11. SELECT ENAME, HIREDATE, LPAD('*',8) "RECENTLY HIRED" FROM EMP WHERE HIREDATE = (SELECT MAX(HIREDATE) FROM EMP) UNION SELECT ENAME NAME, HIREDATE, LPAD(' ',15) "RECENTLY HIRED" FROM EMP WHERE HIREDATE != (SELECT MAX(HIREDATE) FROM EMP);

12. SELECT ENAME,SAL FROM EMP E WHERE SAL > (SELECT AVG(SAL) FROM EMP F WHERE E.DEPTNO = F.DEPTNO);

13. SELECT ENAME, SAL FROM EMP A WHERE &N = (SELECT COUNT (DISTINCT(SAL)) FROM EMP B WHERE A.SAL<=B.SAL);

14. SELECT * FROM EMP A WHERE A.EMPNO IN (SELECT EMPNO FROM EMP GROUP BY EMPNO HAVING COUNT(EMPNO)>1) AND A.ROWID!=MIN (ROWID));

15. SELECT ENAME "EMPLOYEE",TO_CHAR(TRUNC(MONTHS_BETWEEN(SYSDATE,HIREDATE)/1 2))||' YEARS '|| TO_CHAR(TRUNC(MOD(MONTHS_BETWEEN (SYSDATE, HIREDATE),12)))||' MONTHS ' "LENGTH OF SERVICE" FROM EMP;