SQL

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

Data Definition Language (DDL)

1. *What operator performs pattern matching?*

LIKE operator

1. *What operator tests column for the absence of data?*

IS NULL operator

1. *Which command executes the contents of a specified file?*

START <filename> or @<filename>

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

&

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

RUN

1. *What are the wildcards used for pattern matching?*

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

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

True

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

True

1. *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

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

REVOKE

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

USER\_TAB\_PRIVS\_MADE, USER\_TAB\_PRIVS\_RECD

1. *Which system table contains information on constraints on all the tables created?*

USER\_CONSTRAINTS

1. *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.

1. *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.

1. *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.

1. *What will be the output of the following query?*

*SELECT REPLACE(TRANSLATE(LTRIM(RTRIM('!! ATHEN !!','!'), '!'), 'AN', '\*\*'),'\*','TROUBLE') FROM DUAL;*

TROUBLETHETROUBLE

1. *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.

1. *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.

1. *Which date function is used to find the difference between two dates?*

MONTHS\_BETWEEN

1. *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.

1. *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.

1. *What is the use of the DROP option in the ALTER TABLE command?*

It is used to drop constraints specified on the table.

1. *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

1. *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.

1. *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.

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

FLOOR

1. *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)/12))||' YEARS '|| TO\_CHAR(TRUNC(MOD(MONTHS\_BETWEEN (SYSDATE, HIREDATE),12)))||' MONTHS ' "LENGTH OF SERVICE" FROM EMP;