Subject Name : Relational Database Management Systems

SQL Query

- **EMPLOYEE (emp_id, emp_name, birth_date, gender, dept_no, address, designation, salary, experience, email)**
- **DEPARTMENT (dept_no, dept_name, location)**

1. Create the EMP Table with all necessary constraints such as In EMP TABLE: Employee id should be primary key, Department no should be Foreign key, employee age (birth_date) should be greater than 18 years, salary should be greater than zero, email should have (@ and dot) sign in address, designation of employee can be “manager”, “clerk”, “leader”, “analyst”, “designer”, “coder”, “tester”.

Ans:-
```
CREATE TABLE EMP (
emp_id NUMBER(10) PRIMARY KEY,
 emp_name VARCHAR2(20),
birth_date DATE,
gender VARCHAR2(6),
dept_no NUMBER(5),
address VARCHAR2(50),
designation VARCHAR2(30),
salary NUMBER(5), experience NUMBER(2),
email VARCHAR2(20),
CONSTRAINT chk_gender CHECK (gender IN ('Male', 'Female')), FOREIGN KEY
(dept_no) REFERENCES DEPT(dept_no) );
```

2&3. Create DEPT table with neccessary constraint such as Department no should be primary key, department name should be unique.

Ans:-
```
CREATE TABLE DEPT ( dept_no NUMBER(5) PRIMARY KEY,
dept_name VARCHAR2(30),
 location VARCHAR2(20) );
```

4&5. After creation of above tables, modify Employee table by adding the constraints as ‘Male’ or ‘Female’ in gender field and display the structure.

Ans:-
```
Alter table emp add column gender varchar(6) check (gender in
('Male','Female'));
        -- Display the structure of the EMP table --
DESC EMP;  OR  PRAGMA table_info(EMP);
```

6. Insert proper data (at least 5 appropriate records) in all the tables.

Ans:-

Inserting Data into DEPT Table:

```
INSERT INTO DEPT VALUES (1, 'hr', 'modasa');

INSERT INTO DEPT VALUES (2, 'engineering', 'ahmedabad');

INSERT INTO DEPT VALUES (3, 'sales', 'malpur');

INSERT INTO DEPT VALUES (4, 'marketing', 'vadodara');

INSERT INTO DEPT VALUES (5, 'finance', 'surat');
```

Inserting Data into EMP Table:

```
INSERT INTO EMP VALUES (101, 'Vivek', TO_DATE('2002-12-28', 'YYYY-MM-DD'), 'Male', 2, 'Modasa', 'manager', 5000, 10, 'vivek@gmail.com');

INSERT INTO EMP VALUES (102, 'Keyur', TO_DATE('2004-03-30', 'YYYY-MM-DD'), 'Male', 1, 'Modasa', 'clerk', 3000, 5, 'Keyur@gmail.com');

INSERT INTO EMP VALUES (103, 'Pinkal', TO_DATE('2004-06-09', 'YYYY-MM-DD'), 'Female', 3, 'Malpur', 'designer', 4000, 8, 'pinkal@gmail.com');

INSERT INTO EMP VALUES (104, 'Ghanshaym', TO_DATE('2002-05-29', 'YYYY-MM-DD'), 'Male', 4, 'Malpur', 'analyst', 4500,  4, 'ghanshaym@gmail.com');

INSERT INTO EMP VALUES (105, 'Hiral', TO_DATE('2002-05-12', 'YYYY-MM-DD'), 'Female', 5, 'Malpur', 'leader', 6000, 12, 'hiral@gmail.com');
```

7. Describe the structure of table created.

Ans:- DESCRIBE EMP; **OR** PRAGMA table_info(EMP);

8. List all records of each table in ascending order.

Ans:- **1. List all records from the DEPT table in ascending order by dept_no:**

```
SELECT * FROM DEPT
ORDER BY dept_no ASC;
```

2. List all records from the EMP table in ascending order by emp_id:

```
SELECT * FROM EMP
ORDER BY emp_id ASC;
```

9. Delete the department whose loction is Ahmedabad.

Ans:-
```
DELETE FROM DEPT
WHERE location = 'Ahmedabad';
```

10. Display female employee list

Ans:-
```
SELECT * FROM EMP
WHERE gender = 'Female';
```

11. Display Departname wise employee Names

Ans:-
```
SELECT d.dept_name, e.emp_name
FROM EMP e
JOIN DEPT d ON e.dept_no = d.dept_no
ORDER BY d.dept_name, e.emp_name;
```

12. Find the names of the employee who has salary less than 5000 and greater than 2000.

Ans:-
```
select emp_name FROM emp WHERE salary BETWEEN 2000 AND 5000;
```

13. Display the names and the designation of all female employee in descending order.

Ans:-
```
SELECT emp_name, designation
FROM EMP
WHERE gender = 'Female'
ORDER BY emp_name DESC;
```

14. Display the names of all the employees who names starts with ‘A’ ends with ‘A’.

Ans:-
```
SELECT emp_name
FROM EMP
WHERE emp_name LIKE 'A%A';
```

15. Find the name of employee and salary for those who had obtain minimum salary.

Ans:-
```
SELECT emp_name, salary
FROM EMP
WHERE salary = (SELECT MIN(salary) FROM EMP);
```

16. Add 10% raise in salary of all employees whose department is ‘IT’.

Ans:-
```
UPDATE EMP
SET salary = salary * 1.10
WHERE dept_no = (SELECT dept_no FROM DEPT WHERE dept_name = 'IT');
```

17. Count total number of employees of ‘IT’ department.

Ans:-
```
SELECT COUNT(*) AS total_employees
FROM EMP
WHERE dept_no = (SELECT dept_no FROM DEPT WHERE dept_name = 'IT');
```

18. List all employees who born in the current month.

Ans:- select * from emp where extract(month from birth_date)= extract(month from current_date);

OR

```
SELECT *  FROM emp
WHERE strftime('%m', birth_date) = strftime('%m', CURRENT_DATE);
```

19. Print the record of employee and dept table as “Employee works in department ‘MBA’.

Ans:-
```
SELECT emp_name || ' works in department ' || dept_name AS
employee_department
FROM EMP
JOIN DEPT ON EMP.dept_no = DEPT.dept_no
WHERE DEPT.dept_name = 'MBA';
```

OR

```
select e.emp_name,d.dept_name from emp e JOIN dept d ON e.dept_no =
d.dept_no;
```

20. List names of employees who are fresher’s (less than 1 year of experience).

Ans:-
```
SELECT emp_name
FROM EMP
WHERE experience < 1;
```

21. List department wise names of employees who has more than 5 years of experience.

Ans:-
```
SELECT DEPT.dept_name, EMP.emp_name
FROM EMP
JOIN DEPT ON EMP.dept_no = DEPT.dept_no
WHERE EMP.experience > 5
ORDER BY DEPT.dept_name, EMP.emp_name;
```

OR

```
SELECT emp_name, experience
 FROM emp
  WHERE experience > 5;
```

22. Crete Sequence to generate department ID

Ans:- create sequence dept_id_seq START WITH 1 INCREMENT BY 1;

23. List department having no employees

Ans:-
```
SELECT DEPT.dept_name, COUNT(EMP.emp_id) AS employee_count
FROM DEPT
LEFT JOIN EMP ON DEPT.dept_no = EMP.dept_no
GROUP BY DEPT.dept_name;
```

OR

```
select d.dept_name from dept d LEFT JOIN emp e ON d.dept_no= e.dept_no
where e.emp_id IS NULL;
```