Lab 2 : **Dipesh Singh - 190905520**

**Question 1 :**

**Create Employee table with following constraints:**

**•Make EmpNo as Primary key.**

**•Do not allow EmpName, Gender, Salary and Address to have null values.**

**•Allow Genderto have one of the two values: ‘M’, ‘F’.**

create table Employee (EmpNo char(9) primary key, EmpName varchar(20) not null, gender char(1) check(gender in ('F', 'M')) not null, salary number(8,0) not null, address varchar(50) not null, Dno number(10));

**Question 2 :**

**Create Department table with following:**

**•Make DeptNo as Primary key**

**•Make DeptName as candidate key**

create table Department(DeptNo number(10) primary key, DeptName varchar(20) unique, location varchar(50));

**Question 3 :**

**Make DNo of Employee as foreign key which refers to DeptNo of Department.**

alter table Employee modify foreign key(Dno) references Department(DeptNo);

**Question 4 :**

**Insert few tuples into Employee and Department which satisfies the above constraints.**

insert all into Department values(5522, 'Computer Sc', 'NLH') into Department values(5520,'Chemical', 'AB-2') into Department values(5524, 'IT', 'AB-5') select \* from dual;

insert all into Employee values('190905520', 'Dipesh', 'M', 300000, 'Delhi', 5522) into Employee values('190905522', 'Ayush', 'M', 200000, 'Kolkata', 5522) into Employee values('190905524', 'Swarnim', 'F', 400000, 'Banaras', 5522) into Employee values('190909008', 'Khushal', 'M', 100000, 'Mumbai', 5524) select \* from dual;

**Question 5 :**

**Try to insert few tuples intoEmployee and Department which violates some of the above constraints.**

insert into Employee values('190905520', 'Pritima', 'F', 300000, 'Delhi', 5522);

insert into Employee values('190905569', 'Pritima', 'X', 3000, 'Delhi', 5522);

insert into Employee values('190905569',, 'M', 3000, 'Delhi', 5522);

**Question 6 :**

**Try to modify/delete a tuple which violates a constraint.**

delete from Department where DeptNo=5522;

**Question 7 :**

**Modify the foreign key constraint of Employee table such that whenever a department tuple is deleted, the employees belonging to that department will also be deleted.**

select constraint\_name, table\_name, constraint\_type from user\_constraints;

alter table Employee drop constraint SYS\_C007022;

alter table Employee add constraint FK foreign key(Dno) references Department(DeptNo) on delete cascade;

**Question 8 :**

**Create a named constraint to set the default salary to 10000 and test the constraint by inserting a new record.**

alter table Employee modify(salary default 10000);

**Question 9 :**

**List all Students with names and their department names.**

select name, dept\_name from student;

**Question 10 :**

**List all instructors in CSE department.**

select \* from instructor where dept\_name='Comp. Sci.';

**Question 11 :**

**Find the names of courses in CSE department which have 3 credits.**

select title from course where dept\_name='Comp. Sci.' and credits=3;

**Question 12 :**

**For the student with ID 12345 (or any other value), show all course-id and title of all courses registered for by the student.**

select takes.course\_id, course.title from takes, course where ID=12345 and takes.course\_id=course.course\_id;

**Question 13 :**

**List all the instructors whose salary is in between 40000 and 90000.**

select \* from instructor where salary>=40000 and salary<=90000;

**Question 14 :**

**Display the IDs of all instructors who have never taught a course.**

select \* from instructor natural left outer join teaches where sec\_id is null;

**Question 15 :**

**Find  the  student  names,  course  names,  and  the  year,  for  all  students those  who  have attended classes in room-number 303.**

select name, title, takes.year from student, section, course, takes where room\_number=514 and course.course\_id=section.course\_id and course.course\_id=takes.course\_id and takes.ID=student.ID and takes.year=section.year and takes.sec\_id=section.sec\_id and section.semester=takes.semester;

**Question 16 :**

**For all students who have opted courses in 2015, find their names and course id’s with the attribute course title replaced by c-name.**

select name, course\_id as c\_name from student natural join takes where takes.year=2015;

**Question 17 :**

**Find the names of all instructors whose salary is greater than the salary of at least one instructor of CSE department and salary replaced by inst-salary.**

select distinct a.name, a.salary as inst\_salary from instructor a, instructor b where b.dept\_name='Comp. Sci.' and a.salary>b.salary;

**Question 18 :**

**Find the names of all instructors whose department name includes the substring ‘ch’.**

select name from instructor where dept\_name like '%ch%';

**Question 19 :**

**List the student names along with the length of the student names.**

select name, length(name) from student;

**Question 20 :**

**List the department names and 3 characters from 3rdposition of each department name.**

select dept\_name, substr(dept\_name, 3, 3) from Department;

**Question 21 :**

**List the instructor names in upper case.**

select upper(name) from instructor;

**Question 22 :**

**Replace NULL with value1(say 0) for a column in any of the table**

select nvl(grade,'F') from takes;

**Question 23 :**

**Display the salary and salary/3 rounded to nearest hundred from Instructor.**

select salary, round(salary/3, -2) as rounded\_salary from instructor;