Assignment 2

Question: 1

Create the COMPANY database shown below after identifying all the keys. Poputale the database with the given data. Write down relational expressions for the following queries.

Emp table data

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-Dec-80	800		20
7499	ALLEN	SALESMAN	7698	20-Feb-81	1600	300	30
7521	WARD	SALESMAN	7698	22-Feb-81	1250	500	30
7566	JONES	MANAGER	7839	02-Apr-81	2975		20
7654	MARTIN	SALESMAN	7698	28-Sep-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-May-81	2850		30
7782	CLARK	MANAGER	7839	09-Jun-81	2450		10
7788	SCOTT	ANALYST	7566	09-Dec-82	3000		20
7839	KING	PRESIDENT		17-Nov-81	5000		10
7844	TURNER	SALESMAN	7698	08-Sep-81	1500	0	30
7876	ADAMS	CLERK	7788	12-Jan-83	1100		20
7900	JAMES	CLERK	7698	03-Dec-81	950		30
7902	FORD	ANALYST	7566	03-Dec-81	3000		20
7934	MILLER	CLERK	7782	23-Jan-82	1300		10

Dept table data

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

1. List the name of the employees in ascending order of the Dptnos and descending order of Jobs.
2. Display the Empno, Ename, Hiredate and Experience (in number of months) of all Managers. (Hint: use sql function 'months_between').
3. List the emps who are joined in the year 81.
4. List the emps in the asc order of Designations of those joined after the second half of 1981. (use sql function 'to_char').
5. List the emps who joined on 1-MAY-81,3-DEC-81,17-DEC-81,19-JAN-80 in asc order of seniority.
6. List the Empno, Ename and annual salary as A_Sal of employees whose Annual salary ranges from 22000 and 45000.
7. List the emps those are having a 4 letter name and the third letter in their name as ‘r’.
8. List the names starting with ‘S’ and ending with ‘H’.
9. List Empno, Ename and deptno along with DNAME and Loc of all employees working Under ‘ACCOUNTING’ & ‘RESEARCH’ in the ascending oreder of Deptno.
10. List the Empno, Ename, Sal and Dname of all the Managers and Analysts who are working in New York or Dallas with an exp more than 7 years without receiving the Comm in ascending order of Location.

11. List the Emps who are senior to their own managers.
12. Find the highest paid employee of sales department.
13. Find the total annual salary to distribute job wise in the year 81.
14. List the manager number, manager name and the number of employees working for those mgrs in the ascending order of Mgrno.
15. List the department details where at least two emps are working.
16. Display dname and No. of emps where at least two emps are clerks.
17. List the details of the department where maximum number of emps are working.
18. List the name of the depts where more than average no. of emps are working.
19. List the Name, Job and Salary of the emps who are not belonging to the department 10 but who have the same job as the emps of dept 10.
20. List the Deptno and their average salaries as AVG_SAL for dept with the average salary less than the averages for all departments.

Question: 2

Create the UNIVERSITY database shown below after identifying all the keys. Poputale the database with the given data. Write down relational expressions for the following queries.

id	name	email
123	Bart	bart@fox.com
456	Milhouse	milhouse@fox.com
888	Lisa	lisa@fox.com
404	Ralph	ralph@fox.com

students

id	name
1234	Krabappel
5678	Hoover
9012	Stepp

teachers

id	name	teacher_id
10001	Computer Science 142	1234
10002	Computer Science 143	5678
10003	Computer Science 190M	9012
10004	Informatics 100	1234

courses

student_id	course_id	grade
123	10001	B-
123	10002	C
456	10001	B+
888	10002	A+
888	10003	A+
404	10004	D+

grades

1. List all of the grades given in the course Computer Science 143. Do this as a single query and do not hard-code 143's ID number in the query.

2. List the names and grades of all students that took Computer Science 143 and got a B- or better. Do this as a single query and do not hard-code 143's ID number in the query.

3. List all names of all students who were given a B- or better in any class, along with the name of the class(es) and the (B- or better) grade(s) they got. Arrange them by the student's name in ABC order.

4. List the names of all courses that have been taken by 2 or more students. Do this as a single query and do not hard-code any ID numbers in the query. Don't show duplicates.