Q1)

```
CREATE Table Students (
  Sid Varchar(20)
  name varchar(20)
  age  INTEGER
  gpa  Float
  Primary Key (pid)
  );
```

```
CREATE Table courses (
  Cid Varchar20
  deptid Varchar(15)
  name  Varchar(20)
  PRimary Key (cid)
  );
```

```
CREATE Table professors (
  SSN  INTEGR
  name  varchar(20);
  address  varchar(30);
  phone  varchar(10)
  deptid  varchar(15)
  primary Key (SSN)
  );
```

```
Create Table Enrolled (
  Sid  Varchar(20)
  Cid  varchar(20)
  Section  Integer
  grade  char(2)
  Primary Key (Sid, Cid)
  Foriegn Key (sid) Ref
    Students
  Foriegn Key (cid) Ref
    Courses
  Foriegn Key (cid, Section)
    Ref Teaches );
```

```
Create table Teaches (
  cid varchar(20)
  Section INteger
  SSN INteger
  Primary Key (cid, section)
  Foriegn Key (cid) Refrences
    Students
  Foriegn Key (SSN) Ref professors
```

2) SELECT name
FROM professors
WHERE deptid = 'CS';

3) SELECT S.sid
FROM students AS S INNER JOIN enrollment AS E ON
S.sid = E.sid INNER JOIN courses AS
C ON E.cid = C.cid
WHERE C.deptid = 'CS';

4) SELECT p.ssn p.name
FROM professors AS P INNER JOIN teaches
AS T ON P.SSN = T.SSN INNER JOIN
courses AS C on C.cid = T.cid
WHERE p.deptid = 'CS' AND C.deptid <> 'CS';

5) SELECT COUNT(cid)
FROM courses
Group by deptid;

6) SELECT deptid
FROM courses
Group By deptid
Having Count (cid) > 10;

7) SELECT student.name
FROM students S
JOIN enrollment e on e.sid = S.sid
JOIN courses c on c.cid=e.cid
JOIN teaches t on t.cid = c.cid
JOIN professors p on p.ssn = t.ssn
WHERE p.name LIke 'M%'
Group By students.name;

8) SELECT deptid, count (sid) AS 'Small',
count (sid) >= 30 and Count (sid) < 80 AS 'Medium'
Count (section) >= 80 AS 'Large'
FROM enrollment E, courses C
WHERE E.cid = C.cid
GROUP BY E.section, C.ci

9) SELECT p.name
FROM professors P, courses C, teaches t
WHERE p.deptid = c.deptid
GROUP BY p.name having Count (p.name) > 20;

10) SELECT t1.section, t1.grade, (count(t1.grade) * 100 /
(SELECT count(*)
FROM enrollment
WHERE t1.grade = 'F'))
'Score' from enrollment t1,
courses t2 where t1.cid = t2.cid
GROUP by t1.section, t1.grade)

11) SELECT distinct name
FROM pallbears p, enrollment e
WHERE grade = 'F'
GROUP BY name

12) SELECT Low * (
SELECT count (sno)
FROM Students
WHERE sno < 3.3) / (count(sno)) "% Sno
FROM Students

13)
```
SELECT e.cid, e.section
FROM enrollment e
GROUP BY e.cid, e.section
Having count ( CASE WHEN e.grade IN ('D', 'F')
    THEN 1 END)) / count (*) > (
SELECT AVG ( failings)
FROM (
        SELECT count ( case when e.grade
            IN ('D', 'F') THEN 1 END)) /
    Count (*) As Failings
    FROM enrollment e
    GROUP BY e.cid, e.section ) As subquery
);
```

14) SELECT c.deptid, AVG(student_cnt) AS SPS
AVG(case when c.grade = 'A' then 1
else 0 END) * 100 / AVG(student_cnt)
AS "%A",
AVG(case WHEN c.grade 'B' Then 1
else 0 END)) * 100 / AVG (student_cnt
AS "%B",
AVG(case when c.grade = 'C' Then 1 else 0
END)) * 100 / AVG (student_cnt) AS "%C",
AVG(Case when e.grade IN ('D', 'F') Then 1 else
0 END) * 100 / AVG (student_cnt) * 5
"%D or F"
FROM courses c
JOIN teaches t ON c.cid = t.cid
JOIN (SELECT cid, section, COUNT(*) AS student_
cnt
FROM enrollment
Group BY cid, section) AS e on
t.cid = e.cid AND t.section = e.section
JOIN professors p ON t.SSN = p.SSN
Group BY c.deptid;