1 a Find the titles of courses in the Biology department that have more than 3 credits.

```
SELECT ALL * FROM course WHERE dept_name = 'Biology' and credits>3;
```

b. Find all classrooms situated either in ‘Watson’ or ‘Painter’ buildings;

```
(SELECT ALL* FROM classroom where building = 'Watson')
union (SELECT ALL* FROM classroom where building = 'Painter');
```

c. Find all courses offered by the Computer Science department;

```
select * from course where dept_name = 'Comp. Sci'
order by credits;
```

d. Find all courses offered during Spring;

```
select * from section where semester = 'Spring';
```

```
select * from course where course_id like 'CS%'
order by credits;
```

e. Find all students who have more than 45 credits but less than 85;

```
(select * from student where tot_cred>45) intersect
                                        ( select * from student where
tot_cred<85);
```

f. Find all courses where names end with vowels;

```
select * from course where title similar to '%(a|e|u|i|o)';
```

g. Find all courses which have course ‘EE-181’ as their prerequisite;

```
select * from course where course_id='EE-181';
```

2

a. For each department, find the average salary of instructors in that department and list them in ascending order. Assume that every department has at least one instructor;

```
SELECT dept_name, AVG(salary)
FROM instructor
GROUP BY dept_name
-- ORDER BY avg;
ORDER BY dept_name asc;
```

b. Find the building where the biggest number of courses takes place;

```
select building, count(*) from section
group by building
order by count(*) desc limit 1;
```

c. Find the department with the lowest number of courses offered;

```
select dept_name, count(*) from course
group by dept_name
order by count(*) asc limit 1;
```

d. Find the ID and name of each student who has taken more than 3 courses from the Computer Science department;

```
select ID, name from student where ID in(select id from takes
                                          group by id
                                          having count(*)>3)
                                and dept_name = 'Comp. Sci.';
```

e. Find the ID and name of each instructor in a department located in the building “Taylor”

```
select id, name from instructor
               where dept_name in(select dept_name from department
                                                    where building =
'Taylor');
```

f. Find all instructors who work either in Biology, Philosophy, or Music departments;

```
select all* from instructor
            where dept_name='Biology'
               or dept_name='Philosophy'
               or dept_name='Music';
```

g. Find all instructors who taught in the 2018 year but not in the 2017 year;

```
select all* from instructor
            where ID in(select ID from teaches
                                  where year='2018'
                                                except select ID from teaches
                                                                  where
year='2017');
```

3

a. Find all students who have taken Comp. Sci. course and got an excellent grade (i.e., A, or A-) and sort them alphabetically;

```
select all* from student
            where ID in(select ID from takes
                                  where (grade = 'A'
                                                or grade = 'A-')
                                    and course_id in(select course_id from
course
                                                                        where
dept_name = 'Comp. Sci.'))
                           order by name;
```

b. Find all advisors of students who got grades higher than B on any class;

```
select all* from advisor
           where s_ID in(select ID from takes
                                                  where grade = 'A'
                                                     or grade = 'A-'
                                                     or grade='B+');
```

c. Find all departments whose students have never gotten an F or C grade;

```
select * from department
           where dept_name not in(select dept_name from student
                                                  where id in((select id from
takes
                                                                        where
grade='F')

union (select id from takes

where grade like 'C%')));
```

d. Find all instructors who have never given an A and A- grade in any of the courses they taught;

```
select * from instructor
         where dept_name in(select dept_name from course
                                                  where course_id not in (select
course_id from takes

where grade like 'A%' ));
```

e. Find all courses offered in the morning hours (i.e., courses ending before 13:00);

```
select* from course
        where course_id in (select course_id from section
                                                  where time_slot_id in(select
time_slot_id from time_slot

where end_hr<13) );
```