Part 1: Relational Algebra, Tuple Relational Calculus, and Domain Relational Calculus

1) Consider the following relational schema:

Suppliers (*sid*, sname, address)
Parts (*pid*, pname, color)
Catalog (*sid, pid,* cost)

Now, write the Relational Algebra (RA), Tuple Relational Calculus (TRC), and Domain Relational Calculus (DRC) to answer each of the following queries.

a. Find the *names* of the suppliers who supply some red or green part.

b. Find the *sids* of suppliers who supply every part.

Part 2: Using the following database schema, write the SQL queries below.

Database schema:

Department(deptid, dname, location)
Student(snum, sname, deptid, slevel, age)
Faculty(fid, fname, deptid)
Class(cname, meets_at, room, fid)
Enrolled(snum, cname, grade)

1. Get student numbers, names and majors of students who do not have any 'A's in any courses.

2. Find the names of (distinct) faculty who teach 2 or more classes in the same room

3. Find the ids (snum) of the students majoring in a department whose faculty do not teach any classes.