DATABASE SCHEMA:

• TEACHER(instructor\_id, name)

• SUBJECT(subject\_id, name, max\_credit\_allow)

• STUDENT (student\_id, name, entrance\_year, faculty)

• COURSE (course\_id, subject\_id, year, semester, credit, level, instructor\_id, faculty)

• REGISTER(student\_id, course\_id, grade)

level: BASIC, ADVANCED

faculty: IT, PHY

semester: 1, 2, or 3, year: 2017, 2018, 2019

grade: 0 – 10

Specify queries for below data requirments in relational algebra and SQL.

1. List all ID and names of subjects which student ‘1701234’ has registered.
2. Retrieve year and semester which **only** open ‘BASIC’ courses.
3. Retrieve subjects (ID, name) which has never operated as a course
4. Find the ID and name of subjects which all student of faculty ‘IT’ has participated
5. Show id, names of students who has register more than 4 courses in semester 2 of 2019

2. Convert following E/R diagram to relational database schema

