Part 1

```sql
CREATE TABLE courses (
    crn INT(11) PRIMARY KEY,
    prefix VARCHAR(4) NOT NULL,
    number SMALLINT(4) NOT NULL,
    title VARCHAR(255) NOT NULL
)
CHARACTER SET utf8
COLLATE utf8_unicode_ci;


CREATE TABLE students (
    rin INT(9) PRIMARY KEY,
    rcsID CHAR(7),
    `first name` VARCHAR(100) NOT NULL,
    `last name` VARCHAR(100) NOT NULL,
    alias VARCHAR(100) NOT NULL,
    phone INT(10)
)
CHARACTER SET utf8
COLLATE utf8_unicode_ci;
```

Part 2

```sql
1)
ALTER TABLE students
ADD street VARCHAR(255),
ADD city   VARCHAR(100),
ADD state  CHAR(2),
ADD zip    CHAR(5);

2)
ALTER TABLE courses
ADD section VARCHAR(10),
ADD year SMALLINT;

3)
CREATE TABLE grades (
```

```sql
    id INT PRIMARY KEY AUTO_INCREMENT,
    crn INT,
    rin INT,
    grade INT(3) NOT NULL,
    FOREIGN KEY (crn) REFERENCES courses(crn),
    FOREIGN KEY (rin) REFERENCES students(rin)
)
CHARACTER SET utf8
COLLATE utf8_unicode_ci;
```

4)
```sql
INSERT INTO courses (crn, prefix, number, title, section, year)
VALUES
(10101, 'CSCI', 1200, 'Data Structures', '01', 2025),
(10202, 'ITWS', 2210, 'Web Systems Development', '02', 2025),
(10303, 'MATH', 1020, 'Calculus II', '01', 2025),
(10404, 'PSYC', 1200, 'Intro To Psychological Science', '03', 2025);
```

5)
```sql
INSERT INTO students (rin, rcsID, `first name`, `last name`, alias, phone, street, city, state, zip)
VALUES
(660000001, 'pablos', 'Pablo', 'Semidey', 'Pabs', 7875551001, '1 Test St', 'San Juan', 'PR', '00901'),
(660000002, 'marias', 'Maria', 'Lopez', 'MLo', 7875551002, '22 Palm Rd', 'Guaynabo', 'PR', '00968'),
(660000003, 'johnj1', 'John', 'James', 'JJ', 7875551003, '55 Sunset Ave', 'Bayamon', 'PR', '00959'),
(660000004, 'heidik', 'Heidi', 'Kim', 'HK', 7875551004, '10 Lake Dr', 'Caguas', 'PR', '00725');
```

6)
```sql
INSERT INTO grades (crn, rin, grade) VALUES
(10101, 660000001, 95),
(10101, 660000002, 87),
(10101, 660000003, 92),
(10202, 660000001, 88),
(10202, 660000003, 78),
(10303, 660000002, 91),
(10303, 660000004, 84),
(10404, 660000001, 99),
(10404, 660000002, 73),
(10404, 660000003, 89);
```

7)
a)

```
SELECT * FROM students ORDER BY rin;

b)
SELECT * FROM students ORDER BY `last name`;

c)
SELECT * FROM students ORDER BY rcsID;

d)
SELECT * FROM students ORDER BY `first name`;

8)
SELECT DISTINCT
    s.rin,
    CONCAT(s.`first name`, ' ', s.`last name`) AS name,
    s.street, s.city, s.state, s.zip
FROM students s
JOIN grades g ON s.rin = g.rin
WHERE g.grade > 90;

9)
SELECT
    c.crn,
    c.title,
    AVG(g.grade) AS avg_grade
FROM courses c
JOIN grades g ON c.crn = g.crn
GROUP BY c.crn, c.title;

10)
SELECT
    c.crn,
    c.title,
    COUNT(g.rin) AS num_students
FROM courses c
LEFT JOIN grades g ON c.crn = g.crn
GROUP BY c.crn, c.title;
```