1. Write the following queries in SQL, using the university schema.

a. Find the titles of courses in the Comp. Sci. department that have 3 credits.

ANS

```
SELECT title
FROM course
WHERE dept_name = 'Comp. Sci.' AND credits = 3;
```

b. Find the IDs of all students who were taught by an instructor named Dale; make sure there are no duplicates in the result.

ANS

```
SELECT DISTINCT student.ID
FROM student
JOIN takes ON student.ID = takes.ID
JOIN teaches ON takes.course_id = teaches.course_id
JOIN instructor ON teaches.ID = instructor.ID
WHERE instructor.name = 'Dale';
```

c. Find the highest salary of any instructor.

ANS

```
SELECT MAX(salary) AS highest_salary
FROM instructor;
```

d. Find all instructors earning the highest salary (there may be more than one with the same salary).

ANS

```
WITH max_salary AS (
   SELECT MAX(salary) AS highest_salary
   FROM instructor
)
SELECT name
FROM instructor
WHERE salary = (SELECT highest_salary FROM max_salary);
```

2. Write the following inserts, deletes, or updates in SQL, using the university schema.

a. Increase the salary of each instructor in the Comp. Sci. department by 10%.

```
UPDATE instructor
SET salary = salary * 1.10
WHERE dept_name = 'Comp. Sci.';
```

b. Insert every student whose `tot_cred` attribute is greater than 100 as an instructor in the same department, with a salary of $30,000.

ANS

```
INSERT INTO instructor (ID, name, dept_name, salary)
SELECT ID, name, dept_name, 30000
FROM student
WHERE tot_cred > 100;
```