**Core content homework assignment 3a (CC3a)**

**Part A**

Consider the following relation definitions:

* COURSE(course\_number, course\_title)
  + course\_number: a seven-character string, e.g. “COMP378”. Cannot be null.
  + course\_title: a string of up to 100 characters, e.g. “Database Systems”. Cannot be null.
* COURSE\_SECTION(course\_number, year, season, section\_number)
  + course\_number: foreign key referring to COURSE.course\_number. Cannot be null.
  + year: an integer representing a year, e.g. 2021. Cannot be null.
  + season: a single character, either “F” for fall or “S” for spring. Cannot be null.
  + section\_number: a small integer such as 1, 2, 3. Cannot be null.
* It should not be possible to delete a course from the COURSE table when there exists a section from the corresponding course in the COURSE\_SECTION table.

A1. (40 points) Give SQL statements that define the above relations as database tables, enforcing all reasonable constraints. Remember that the easiest way to do this is to construct the tables interactively in phpMyAdmin, then use the SHOW CREATE TABLE command.

A2. (5 points) Suppose we wished to change the database behavior so that deleting a course from the COURSE table causes any sections of that course to also be deleted. How would we change the table definitions to achieve this?

**Part B**

For each of the following descriptions, give an SQL query that would return the desired result from the wine database. For each answer, give both the SQL query and the results returned when you execute the query. If more than 10 rows are returned, give only the first 10 rows.

B1. (10 points) For each supplier, for every product that can be supplied by that supplier, list the supplier name, the product number, and the corresponding delivery period. The list should be given in descending order by delivery period.

B2. (10 points) The same as the previous question, except that (i) only rows with a delivery period of at most two days should be listed; (ii) the purchase price should also be listed; (iii) rows should be ordered in ascending order by purchase price

B3. (10 points) The same as the previous question, except that the product *name* must be listed instead of the product *number*.

**Part C** (20 points; 5 points each)

Answer Review Questions 7.1, 7.2, 7.4, and 7.5 from the textbook. For each answer, briefly explain your reasoning. You are permitted to run queries to help answer the questions.

Total points on assignment: 95