ICS 321 Data Storage & Retrieval — Ex#3 Name:_____

Exercise 2.3.1 from the textbook. The products database consists of 4 relational instances with the following schemas

```
Product(maker, model, type)        Laptop(model, speed, ram, hd, screen, price)
PC(model, speed, ram, hd, price)   Printer(model, color, type, price)
```

The Product relation gives the manufacturer, model number and type (PC, laptop, or printer) of various products. We assume for convenience that model numbers are unique over all manufacturers and product types; that assumption is not realistic, and a real database would include a code for the manufacturer as part of the model number. The PC relation gives for each model number that is a PC the speed (of the processor, in gigahertz), the amount of RAM (in megabytes), the size of the hard disk (in gigabytes), and the price. The Laptop relation is similar, except that the screen size (in inches) is also included. The Printer relation records for each printer model whether the printer produces color output (true, if so), the process type (laser or ink - jet, typically), and the price.

Task 1

Write the following declarations:

a) A suitable schema for relation Product.

b) A suitable schema for relation PC.

c) A suitable schema for relation Laptop.

d) A suitable schema for relation Printer.

e) An alteration to your Printer schema from (d) to delete the attribute color.

f) An alteration to your Laptop schema from (c) to add the attribute od (optical - disk type, e. g., cd or dvd). Let the default value for this attribute be ' none ' if the laptop does not have an optical disk.

Task 2

a) Create a database in DB2 (CREATE DB dbname)

b) Create tables in your database by inputing your SQL declarations into DB2

c) Insert several tuples into the tables you have created (you may use the sample data in the textbook or on the course website).

d) Check your work by issuing a simple SQL query

You may need to look up the documentation for DB2 commands at the vendor's documentation website (google "DB2 Info Center"). The following DB2 commands are provided as a guide:

```
db2start
db2 list db directory
db2 create db ics321a
db2 connect to ics321a
db2 "create table product(model int, maker char(10))"
db2 list tables
db2 "select * from product"
db2 "insert into product values (1233, 'Asus')"
db2 commit work
```