

CS343 H1 Y Section 5101 & 2002 Second Term Test Fall 2003

November 5th 2003

This is a **closed** book, notes, neighbors exam. You have 50 minutes for a total of 150 points. Write your answers in the space provided after each question. You will not be given any credits for anything written outside the page. You will not be given any credits for anything written using a pencil.

Print your First name: _____

Print your Last name: _____

Print your student number: _____

Circle your Tutorial Room: **WI 524** **UC 52**

I do not know rule If for any questions I write the following sentence "I do not know the answer" I will be automatically rewarded by a mark equal to 20% of the mark of the question.

I acknowledge and SIGN that this booklet is complete (8 pages, 6 Questions) and 1 appendix (2 pages):

Question	Points	Maximum points
1		20
2		20
3		20
4		30
5		30
6		30
Total		150

Schema

Consider the following relational schema describing an atlas (the complete schema can be found in appendix).

```
continent(name, area);  
country(name, continent, population);  
province(name, country, capital, population);  
city(name, country, province);
```

Answer the following question using valid DB2 SQL instructions.

Question 1 (20 points)

List the name of the countries of the continent whose name (containing only 7 characters) begins by these letters: 'americ' in alphabetical order.

Question 2 (20 points)

Give the number of cities for each country in the continent whose name is 'asia' in ascending order.

Question 3-a (10 points)

Write a query that will check whether it exists a value in the attribute country of the relation city that is not a valid country. The output will be a list of cities that violate the condition.

Question 3-b (10 points)

Write the ddl instruction that checks automatically the condition listed above.

Question 4 (30 points)

Give the name of the countries that have the most cities.

Question 5 (30 points)

List the countries name in the continent 'asia' that have a larger population than any of the countries in 'europe'.

Question 6 (30points)

For each country in the country table list its name with together the population of the country and the sum of the population of its provinces. The output relation must contain as many tuples as the country relation does.

