CSCE 520 – Spring 2004 Midterm Examination February 18, 2004

Name:

There are a total of 5 questions and 50 points on this examination. Points for each question are shown beside the question. If you think a question is ambiguous, make and state a reasonable assumption. The exam is closed book and closed notes. The use of calculators and similar-looking electronic devices is not allowed. Show your work for possible partial credit. Answer all questions on this exam paper.

1. (12) Briefly define each of the following terms in the context of this course.

- a. composite key
- b. null value
- c. data independence
- d. data dictionary
- e. package
- f. DKNF

2. (6) What is a recursive relationship? Give an example of a recursive relationship. Give a UML diagram and a relational schema showing primary and foreign keys and referential integrity constraints for your example.

3. (6) What is the difference between a database system and a database management system? Give one example of each.

4. (6) Give examples of relations that are in the following normal forms (one each) and briefly explain your answers:

Not in 1NF

In 1NF but not 2NF

In 2NF but not 3NF

5. Consider the diagram on the attached page showing a drugstore customer history form.

a. (10) Draw a class diagram showing the entities and their relationships. Be sure to indicate the cardinality of the relationships.

b. (10) Provide the 3NF relations (in table notation) to represent these entities.