Database Management System
(CS-305, Dec-07)

Section-A

1). a). What do you understand by term data redundancy?
b). What is the significance of foreign key?
c). What is the usage of unifold modeling language (UML)?
d). What is the difference between a procedural and a non-procedural language?
e). What is relational algebra?
f). What is a trigger?
g). What are multivalued dependencies?
h). What do you mean by granularity of data items?
i). What is statistical database security?
j). What is data independence?

Section-B

2). List five significant differences between a file processing system and a DBMS.
3). What are the major functions of a database administrator?
4). What are the desirable properties of transactions in a database?
5). What are locking techniques for concurrency control? Explain.
6). Describe the usefulness of granting privileges to the users.

Section-C

7). (a) What do you mean by relationships? Explain different types of relationships.
(b) What is an ER-diagram? Construct an ER diagram for a hospital with a set of patients and a set of doctors. Associate with each patient a log of the various tests and examinations conducted.
8). Consider the following relational database and give an expression in relational algebra each of the following queries

Employee (person-name, street, city)
Works (person name, company name, salary)
Company (Company name, city)
Managers (person name, manager-name)

(a) Find the names of all employees who work for First Bank Corporation.
(b) Find the names and cities of residences of all employees who work for First Bank Corporation.
(c) Find the names of all the employees who do not work for First Bank Corporation.
(d) Find names of all employees who earn more than $10000 per annum.
(e) Find names of all employees who earn more than every employee of Small Bank Corporation.
9). Write short notes on the following.
(a) Serializability of schedules
(b) Shadow Paging
(c) Granting of Priviledges