T.E. (comp) Sem VI
Advanced Database

Con. 5366-09.

SP-8039

15/12/09

(3 Hours)

[Total Marks : 100

2.30 to 5.30

N.B.: (1) Question No. **1** is **compulsory.**
(2) Answer any **four** out of the **remaining** questions.

1. To design and implement a database for MODERN HOSPITAL that requires automation. The business rules are as given below.

   A patient can choose one of two types of appointments-outpatients or inpatient. Patients can make an appointment with one or more doctors and the doctors can accept appointment with many patients Inpatients should be taken in without an appointment only under emergency situation. They can be recorded as "unscheduled". Diagnosis center also need records of patients those who visited to the diagnosis center. The records are updated with reports after the visit, along with date and time. A bill is also created after the visit and it is linked to a particular doctor. Bills may be paid by cash, credit card or claimed through mediclaim.

   (make additional assumptions and attributes, if necessary)

   (a) Draw an EER diagram for the system. **6**
   (b) Draw an object-oriented schema. **8**
   (c) Take two typical queries and write them in OQL. **6**

2. (a) What are the applications of data warehousing and data mining ? **10**
   (b) Explain data fragmentation, replication and allocation technique for distributed database design. **10**

3. (a) What is the difference between transient and persistence object ? What are the ways of making object persistence ? **10**
   (b) Describe architecture for parallel database. **10**

4. (a) Explain with proper example nested relation in ORDBMS. **10**
   (b) Write short note on Mobile databases. **10**

5. (a) How concurrency control and recovery is done in distributed database ? **10**
   (b) Define the concept of nested relation in ORDBMS with example. **10**

6. Consider the following database for a chain of bookstores.
   Books (Booknum, Primary-author, Topic, Total-stock, Price)
   Bookstore (Storenum, City, State, Zip, Inventory-value)
   Stock (Storenum, Booknum, Qty)

   (a) Indicate a star schema that could be used for building a data warehouse. **10**
   (b) Using examples describe how data mining can be useful in the above application. **10**

7. Write short notes on any **two** of the following :— **20**

   (a) Geographical Information System (GIS)
   (b) Temporal database
   (c) Web databases.