T. E. (Computer) (Sem VI) / Rev. 25/5/07.
(Library) Advance Database.

Con/2873–07. **(REVISED COURSE)** **ND–548**

(3 Hours) **[Total Marks : 100**

N.B **1) Question No.1** is Compulsory.
2) Attempt any **Four** out of remaining
3) Figure to the right indicates full Marks.
4) Figure should be neat and clean.

Q1 A General Hospital consists of a number of specialized wards (such as Maternity, Paediatry, Oncology, etc).Each ward hosts a number of patients, who were admitted on the recommendation of their own GP and confirmed by a consultant employed by Hospital. On admission, the personal details of every patient are recorded. A separate register is to be held to store the information of the tests undertaken and the results of a prescribed treatment. A number of tests may be conducted for each patient. Each patient is assigned to one leading consultant but may be examined by another doctor, if required .Doctors are specialists in some branch of medicine and may be leading consultant for a number of patients, not necessarily from the same ward.

1. Draw an extended E-R diagram for the system.
2. Draw an Object -Oriented schema.
3. Take two typical queries and write them in OQL. [20]

Q.2. Consider the following database for an Insurance company.

Customer (CustID, Custname, Custaddr, Custage)
PolicyType (PolicyID, Pname, Premiumamt, Type, NoofYears)
Agent (AgentId, Agentname, Agentzone)
Policy(CustID, PolicyID, AgentID, DependentName)

a) Discuss how OLAP could be useful for such an organization. **(5)**
b) Indicate a star schema that could be used for building a data warehouse. **(5)**
c) Indicate five typical queries that the warehouse may have to answer (Use SQL) **(10)**

Q.3 Consider a library database system, which maintains entries for magazines, books and journals. For books titles, subject area, author names, publisher name, edition and year are to be stored. For magazines, name. volume number and date etc are to be stored, for journals subject name, subject area, List of articles. editors etc is to be stored. Further for each article the author name, title and some identification for the journal in which it appeared must be stored (You cam make any other reasonable assumptions)

(a) Give the DTD for the XML schema for the described system. **(10)**
(b) Write the following queries in XQuery **(5 X 2 = 10)**
(1) Display books, magazine and journals sorted by year
(2) Find all authors who have written a book and also a journal article in the same year.

Q4 A) Describe different types of fragmentation in a distributed database using an example application [10]
B) Give the general Architecture of a mobile database [10]

Q5 A) Give a list of applications that may benefit from data mining [10]
B) Write detail note on Temporal Database [10]

Q6 A) Define the concept of nested relation in ORDBMS with example [10]

B) Write detail note on Geographical information system (GIS) [10]

Q7 Write short notes on any **Four** [20]

1) Object identity
2) Object structure
3) subclass and super class
4) Persistent object
5) Transient object