Code: **CSCS1T4**

PVP 12

I M.Tech-I Semester-Regular Examinations-March 2014

DATA BASE MANAGEMENT SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1 a) Define DBMS and explain various data models 7 M

b) Explain various applications DBMS 7 M

2 a) Design an ER Schema for a UNIVERSITY database application and draw an ER diagram for the schema. 9 M

b) Explain the following 5 M
- i) Entity
- ii) Relationship
- iii) Entity set
- iv) Relationship-set
- v) Aggregation

3 a) Consider the following database schema 8 M

sailors(Sid:intiger,sname:string,rating: integer,age: real)
boats (bid:intiger,bname:string,color:string)
reserves(sid: integer, bid:integer,day:date)

Write the following queries in Relational Algebra.

i) find the names of sailors who have reserved boat no.103.

ii) find the names of sailors who have reserved a red boat .

iii) find the names of sailors who have reserved a red or a green boat.

iv) find the names of sailors who have reserved all boats.

b) Explain about TRC(tuple relational calculus) with example 6 M

4 a) Explain about functional dependency with examples. 7 M

b) Explain BCNF with example. 7 M

5. Explain following hashing methods

a) static hashing 4 M

b) Extendible hashing 5 M

c) Linear hashing 5 M

6 a) Explain about query optimization 7 M

b) Explain external sorting algorithm 7 M

7 a) What is transaction ? Explain ACID properties 7 M

b) Explain serializability. 7 M

8 a) Explain 2-phase locking protocol. 7 M

b) Explain about crash recovery. 7 M