

Code: CSCS1T4

I M.Tech-I Semester-Regular Examinations-April 2013

**DATABASE 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 what are the advantages of DBMS 6 M
 - b) Explain DBMS architecture in detail 8 M

2. a) Design and draw an ER diagram for airport database application. 8 M
 - b) Explain the following
 - i) Participation constraints
 - ii) Class hierarchies
 - iii) Binary vs Ternary relationships 6 M

3. a) Consider the following database schema
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 SQL
- i) find the names of sailors who have reserved a red boat
 - ii) find the names of sailors who have reserved both a red and a green boat
 - iii) find the average age of sailors with the rating of 10.
 - iv) find the age of the youngest sailor for each rating level
- 8 M
- b) Explain about TRC with example 6 M
4. Explain 1NF, 2NF and 3NF with examples. 14 M
5. a) Explain about B⁺ - Trees 7 M
- b) Explain about RAID levels 7 M
6. a) Explain about query evaluation plan with example. 7 M
- b) Explain the evaluation of SELECTION and PROJECTION operations. 7 M
7. a) Define transaction with example and explain ACID Properties. 7 M
- b) Define schedule and explain recoverable and cascade less schedules. 7 M

8. a) Explain the time – stamp ordering protocol.

7 M

b) Explain ARIES recovery algorithm.

7M