

Code: R7420207

**R7**

B.Tech IV Year II Semester (R07) Advanced Supplementary Examinations, June 2012

**DATABASE MANAGEMENT SYSTEMS**

(Electrical and Electronics Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions

All questions carry equal marks

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- 1 (a) Draw and explain the structure of a DBMS.  
(b) Explain the various steps involved in design of the database.
- 2 (a) List and explain the different set operations that can be performed in relational algebra.  
(b) Draw the ER diagram for employees, projects and department's entity sets and the sponsors relationship set to map the above.
- 3 Consider the following schema  
Sailor (sid:integer, sname:string, rating:integer, age:real)  
Reserves (sid:integer, bname:string, color:string)  
Reserves (sid:integer, bid:integer, day:date)  
Answer the following queries using SQL.  
(a) Find the names of sailors who have reserved boat number 103.  
(b) Find the sailors who have reserved a red boat.  
(c) Compute increments for the ratings of persons who have sailed two different boats on the same day.  
(d) Find the sids of all sailors who have reserved red boats but not green boats.
- 4 (a) What is normalization? Explain the BCNF and 3NF in detail.  
(b) Explain the various properties of decompositions.
- 5 (a) Discuss in detail about the lock based concurrency control.  
(b) What are the ACID properties? Explain them.
- 6 (a) Explain 2PL protocol in detail.  
(b) Discuss in detail about the time stamp based concurrency control.
- 7 (a) Write short notes on tree based indexing.  
(b) Differentiate between primary indexing and secondary indexing.
- 8 (a) Discuss in detail about the record formats.  
(b) Write short notes on extendible hashing.

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