Code: R7410410

R07

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013

DATABASE MANAGEMENT SYSTEMS

(Common to ECE and E.Con.E)

Time: 3 hours Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Define database system. Explain advantages of database system over traditional file system.
 - (b) Explain the database users and user interfaces.
 - (c) Construct an ER diagram for hospital management. Identify entities, attributes for each entity, relationship among entities. Represent necessary constraints in this design process.
- 2 (a) Write short notes on:
 - (i) Views. (ii) Integrity constraint.
 - (b) Consider following relation schema.

Sailors (sid: integer, sname: string, rating: integer, age: real)

Boats (bid: integer, bname: string, color: string)

Reserves (sid: integer, bid: integer, day: date)

Write the queries in relational algebra.

- (i) Find names of sailors who have good rating (>=8).
- (ii) Find the names of sailors who have reserved red boat and having rating less than 7.
- (iii) Find the sids of sailors with age more than 20 years and not reserved interlake boat.
- (iv) Find the names, age of sailors who have reserved at least two boats.
- 3 (a) Explain following clauses in SQL with example.
 - (i) EXCEPT (ii) EXISTS (iii) AVG.
 - (b) Explain with example different types of join operations.
- 4 (a) What is normalization? Explain in brief 1NF, 2NF and 3NF.
 - (b) What is dependency preserving decomposition?
- 5 (a) Explain ACID properties of transaction.
 - (b) Explain two phase locking protocol with example.
- 6 (a) Explain deferred database modification technique for recovery.
 - (b) How to recover a system from crash with loss of non-volatile storage?
- 7 Write short notes on:
 - (a) Primary index.
 - (b) Secondary index.
 - (c) Hash based indexing.
- 8 Explain buffer management and space management.
