

Code: R7420207

R07

B.Tech IV Year II Semester (R07) Supplementary Examinations December/January 2014/2015

DATABASE MANAGEMENT SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) List five responsibilities of a database management system.
(b) Discuss in detail about ER-Model.
- 2 (a) What is relational completeness? If a query language is relationally complete, can you write any desired query in that language?
(b) List and explain the different set operations that can be performed in relational algebra.
- 3 Consider the following employee database, where the primary keys are underlined. Give an expression in SQL for each of the following queries.
employee (*employee* – name, street, city)
works (*employee* – name, *company* – name, salary)
company (*company* – name, city)
manages (*employee* – name, *manager* – name)
(a) Find the names of all employees who work for first bank corporation.
(b) Find the names and cities of residence of all employees who work for first bank corporation.
(c) Find the names, street addresses, and cities of residence of all employees who work for first bank corporation and earn more than \$10,000.
(d) Find all employees in the database who live in the same cities as the companies for which they work.
(e) Assume that the companies may be located in several cities. Find all companies located in every city in which small bank corporation is located.
- 4 (a) Explain 3NF with example.
(b) Explain schema refinement in data base design with example.
- 5 (a) Discuss in detail about the lock based concurrency control.
(b) What are the ACID properties? Explain in detail.
- 6 (a) Explain 2PL protocol in detail.
(b) Discuss in detail about the time stamp based concurrency control.
- 7 (a) Explain about Hash based indexing with example.
(b) Discuss about tree based indexing with example.
- 8 Define the following:
(a) Static hashing.
(b) Extendible hashing.
(c) Linear hashing.
(d) Buffer manager.
