

Code: 9F00301

MCA III Semester Supplementary Examinations September/October 2014

DATABASE MANAGEMENT SYSTEMS

(For students admitted in 2009, 2010, 2011 and 2012 only)

Time: 3 hours

Max Marks: 60

Answer any FIVE questions

All questions carry equal marks

- 1 (a) List out the significant difference between a file processing system and a DBMS.
(b) What is data abstraction? Explain the different levels of abstraction to hide the complexity of the user.
- 2 (a) Draw the ER diagram for university.
(b) Explain the terms: (i) Generalization. (ii) Attribute inheritance.
- 3 Explain about Tuple relational calculus and domain relational calculus.
- 4 For the following relational database, query the expressions in SQL.
Employee (emp_name, street, city)
Works (emp_name, company_name, salary)
Company (company name, city)
Manages (emp_name, manager_name)
(i) Find all employees who earn more than the average salary of all companies.
(ii) Find the company that has most employees.
(iii) Find the company that has smallest payroll.
(iv) Find those companies whose employees earn a higher salary than the average salary at bank corporation.
- 5 Explain the following normal forms:
(a) 1NF.
(b) 2NF.
(c) 3NF.
- 6 (a) Explain in detail about validation protocol.
(b) Discuss in detail about the implementation of atomocity and durability.
- 7 Explain log based recovery in detail.
- 8 (a) Construct a B⁺ tree with the following key elements (order of the tree is 3) 5, 3, 4, 9, 7, 15, 14, 21, 22, 23.
(b) Mention the purpose of Indexing. How Indexing can be done by B⁺ tree? Explain.
