Code: ME5T6FE5, EC5T6FE2

III B.Tech - I Semester – Regular Examinations - November 2015

DATABASE MANAGEMENT SYSTEMS
(Common to ME, ECE)

Duration: 3 hours   Max. Marks: 70

Answer any FIVE questions.   All questions carry equal marks

1 a) Discuss the main characteristics of the database approach
and how it differs from traditional file systems.   7 M

b) Describe the three schema architecture. Why do we need
mappings between schema levels?   7 M

2 a) Discuss the entity integrity and referential integrity
constraints. Why is each considered important?   6 M

b) Consider the COMPANY relational database schema.   8 M
Employee(Fname, Minit, Lname, Ssn, Bdate, Address, Sex,
Salary, Super_ssn, Dno)
Department(Dname, Dnumber, Mgr_ssn, Mgr_start_date)
Dept_Locations(Dnumber, Dlocation)
Project(Pname, Pnumber, Plocation, Dnum)
Works_on(Essn, Pno, Hours)
Dependent(Essn, Dependent_name, Sex, Bdate,
Relationship)

Specify the following views in SQL on the company database schema.

i) A view that has the department name, manager name, and manager salary for every department.

ii) A view that has the project name, department name, number of employees, and total hours worked per week on the project for each project.

3 a) What is an entity type? What is an entity set?   4 M

b) Draw an E-R diagram for banking enterprise.   10 M

4 a) Discuss the naming conventions used for ER schema diagrams.   7 M

b) Describe the steps of an algorithm for ER to relational mapping.   7 M

5 a) Describe the concept of transitive dependency and explain how this concept is used to define 3NF.   7 M

b) What is functional dependency? When are two sets of functional dependencies equivalent? How can we determine their equivalence.   7 M

6 a) What are the main goals for the RAID technology? How does it achieve them? 7 M

b) What are the differences between primary index, secondary index and clustering index? 7 M

7 a) Why concurrency control is needed? Explain. 6 M

b) Draw a state diagram and discuss the typical states that a transaction goes through during execution. 8 M

8 a) Describe the three phases of the ARIES recovery method. 10 M

b) Explain the terms: 4 M
   i) Deferred update
   ii) Immediate update