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## Fifth Semester B.E. Degree Examination, June 2012

### Database Management Systems

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1
  - a. What are the advantages of DBMS? (06 Marks)
  - b. Differentiate between file, system and DBMS. (06 Marks)
  - c. With a neat diagram, explain the structure of DBMS. (08 Marks)
  
- 2
  - a. With a neat diagram, explain the main phases of database design. (08 Marks)
  - b. What is an attribute? Explain the different types of attributes? (06 Marks)
  - c. Write any 6 notations for ER diagrams. (06 Marks)
  
- 3
  - a. Explain the characteristics of relation. (06 Marks)
  - b. Explain SELECT and PROJECT operation with syntax and examples. (07 Marks)
  - c. What is join? Explain the different types of joins. (07 Marks)
  
- 4
  - a. Explain division operation with an example. (08 Marks)
  - b. Write the SQL queries for the following, using the company database schema.  
 Employee (fname, minuit, Lname, SSn, Bdate, sex, sal, supee\_ssn, Duo).  
 Department (Dname, Dnumber, Mgr\_ssn, Mgr\_start\_date).  
 Project (pname, pnumber, ploc, Dnum).  
 Works on (Essn, puo, hours).  
 Dependent (Essn, dependent-name, sex, Bdate, relationship).
    - i) Retrieve the names of all employees who do not have supervisors.
    - ii) Show the resulting salaries if every employee working on the “PRODUCTS” project is given a 10 percent raise.
    - iii) Retrieve the name of each employee who has a dependent with the first name and sex as the employee. (12 Marks)
  
- 5
  - a. Describe the informal design guidelines for relation schemas. (08 Marks)
  - b. Explain the first normal form and second normal forms with suitable example. (12 Marks)
  
- 6
  - a. Briefly explain the properties of relational decompositions. (10 Marks)
  - b. What are the main objectives to be considered when designing a secure data base application? (06 Marks)
  - c. Discuss access control and discretionary access control. (04 Marks)
  
- 7
  - a. List the ACID properties. Explain them. (08 Marks)
  - b. How does the strict 2pL ensure serializability and recoverability? (06 Marks)
  - c. What steps are taken in the ARIES method to recover from a DBMS crash? (06 Marks)
  
- 8
 

Write short notes on :

  - a. Transact support in SQL.
  - b. Embedded SQL.
  - c. Views.
  - d. Dead locks. (20 Marks)