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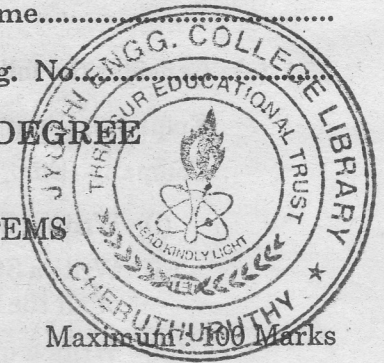
SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2011

CS/IT 04 602—DATABASE MANAGEMENT SYSTEMS

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

Part A

1. How does DBMS support abstraction ?

2. List the roles of people work in a DBMS environment.

3. What is file organization ? Explain sequential files and direct files ?

4. What is a hash function ? Give an example.

5. Why decomposition is needed in normalization ?

6. With an example show the working of division operation in relational algebra.

7. What is conflict serializability ?

8. Give an example for recoverable and unrecoverable schedules.

(8 × 5 = 40 marks)

Part B

9. (a) Explain the components of DBMS with a neat diagram.   (7 marks)

   (b) What do you mean by data models ? Explain network, hierarchical and relational model in detail.

   (8 marks)

Or

10. (a) Draw the ER diagram for hospital management system.   (8 marks)

    (b) Construct appropriate tables for the above ER diagram.   (7 marks)

11. (a) Explain in detail about B+ tree index files.   (7 marks)

    (b) What are problems with traditional file processing system ? How they are removed in database system ? Explain.

    (8 marks)

Or

12. (a) Explain in detail about B tree index files.   (7 marks)

    (b) Explain how the RAID system improves performance and reliability.   (8 marks)

Turn over

13. (a) Consider the following tables :—

Employee (Emp_no, Name, Emp_city)

Company (Emp_no, Company_name, Salary)

   (i) Write a SQL query to display Employee name and company name.

   (ii) Write a SQL query to display employee name, employee city, company name and salary of all the employees whose salary > 10000.

   (iii) Write a query to display all the employees working in 'XYZ' company.

                                                                        (10 marks)

   (b) Compare BCNF and 3NF.   (5 marks)

Or

14. What is relational algebra ? Discuss the various operations of relational algebra.

15. What is a log ? What are the different types of log records ? With an example, explain the various log based recovery schemes.

Or

16. Explain the following concurrency control :—

   (a) Lock based protocol.

   (b) Time stamp based protocol.

                                                                        [4 × 15 = 60 marks]