58396

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, JUNE, 2009
CS/IT.04.602 Database Management Systems

(2004 Admissions)

Time: Three hours   **Maximum: 100 Marks**

Answer all questions

Part-A   (8 x 5 = 40 marks)

1. What are the data models and how they are grouped?

2. Explain about specialization and generalization.

3. Explain how RAID system improves performance and reliability?

4. Write short notes on heap files.

5. Compare BCNF versus 3NF.

6. Explain the database design process.

7. Explain the properties of transactions.

8. What is database security and authorization?

Part-B

9. i) Explain about DBMS architecture.   (8 Marks)

    ii) Write about data independence.   (7 Marks)

(OR)

10. i) Construct an ER diagram for bank transactions.   (8 Marks)

    ii) Explain the distinction among the terms primary key, foreign key and   (7 Marks)
        super key with a suitable example.

11. Describe the different types of file organization. Explain using a sketch of
    each of them with their advantages and disadvantages.   (15 Marks)

(OR)

12. What are the merits and demerits of B^+ tree in databases? Describe the
    structure of a B^+ tree. How update operations are performed on B^+ tree.   (15 Marks)

13. State the goal of normalization? Explain the different levels of
    normalization with example.   (15 Marks)

14. i) Consider the relational database   (4 x 2=8 Marks)

  Employee (empname, street, city)
  Works(empname, companyname, salary)
  Company(companyname, city)
  Manages(empname, managername)

  Give an expression in the relational algebra for each request:

  a. Find the names of all employees who work for first Bank Corporation.
  b. Find the namesw, street addresses and cities of residence of all employees who work for First Bank Corporation and earn more than 200000 per annum.
  c. Find the names of all employees in this databse who live in the same city as the company for which they work.
  d. Find the names of all the employees who earn more than every employees of Small Bank Corporation.

ii) Discuss with examples the five built in aggregate functions offered by SQL. (7 Marks)

15. i) Explain the conflict serializability and view serializability.   (8 Marks)

ii) Explain multiple granularity locking protocol in detail.   (7 Marks)

(OR)

16. i) Discuss in detail on shadow paging.   (7 Marks)

ii) Write short notes on statistical database security.   (8 Marks)