

**2003-PUNJAB UNIVERSITY**  
**B.TECH V SEMESTER MODEL EXAMINATION**  
**RELATIONAL DATA BASE MANAGEMENT SYSTEM**  
**(COMPUTER SCIENCE ENGINEERING)**

TIME-3HOUR  
MARKS-100

ANSWER ALL QUESTIONS.

**PART A [10\*2=20 MARKS]**

- 1(a) What are the major differences between a file processing system and a DBMS ?
- (b) Explain the difference between Physical and Logical Data Independence.
- (c) What are the main functions of a data base administrator ?
- (d) Explain the difference between a weak and strong entity set.
- (e) Define the concept of Aggregation with the help of example.
- (f) Describe the difference between Relation and Relation scheme.
- (g) What are the main advantages of Distributed database ?
- (h) What are the various types of locks available to Control Concurrency ?
- (i) What do you understand by Serializable Schedule ?
- (j) Why are three types of data Description needed?

**PART B [8\*10=80 MARKS]**

2. Explain why 4NF as a normal form more desirable than BCNF with the help of example.
3. Explain the term DML with the help of suitable example.
4. Discuss the Security Model to provide Authorization to various Authenticated Users.
5. What are triggers ? How can they help in building Robust Database?
6. Discuss various Data Recovery Techniques in brief.
7. Explain Merge-Join Algorithm with the help of suitable example.
8. Consider the following Relational Database:

Empolee (EMP\_Name, Street, City)  
Works(EMP\_Name, Company\_Name, Salary)  
Company(Company\_Name, City)  
Manages (EMP\_Name, Manager\_Name)

For each of the following queries, give an expression in the Relational Algebra, Tuple Relational Calculus.

- (a) Find the names of all Employees who work for Satyam.
- (b) Find the names and cities of Residence who work for Satyam.
- (c) Find the names of all Employees who live in the same city as the company for which they work.

(d) Find the names of all Employees who do not work for Satyam.

(e) Find the names of all Employees who live in the same city and on the same street as do their Managers.

9. Write short note on the following:

(a) 4GL's forms Management and Report Writers.

(b) Object Oriented Databases.

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