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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

# B.Tech.(CSE)/(IT) (Sem.-5) DATA BASE MANAGEMENT SYSTEM Subject Code : CS-305 Paper ID : [A0466]

Time: 3 Hrs.

Max. Marks : 60

### **INSTRUCTION TO CANDIDATES :**

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

# SECTION-A

- 1. Write briefly :
  - a. What is DBMS? What are the advantages of using a DBMS?
  - b. What is Statistical Database Security?
  - c. What is recovery techniques based on deferred update?
  - d. Write a short note on multiple granularity locking.
  - e. What is Data Model?
  - f. Differentiate between Tupple Relational Calculus and Domain Relational Calculus?
  - g. Explain in brief type of entities.
  - h. Explain various basic relational algebra operations?
  - i. Define Entity, Attribute and Instances?
  - j. Difference between relational algebra and relational calculus?

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### SECTION-B

- 2. Draw ER diagram for railway reservation consisting of fares, reservation, staff, passengers, etc? Clearly highlight entities, relationship, primary key, and foreign key.
- 3. Discuss with the help of a diagram the three tier architecture of DBMS.
- 4. How to deal with constraint violation?
- 5. Differentiate between logical data independence and physical data independence also take appropriate example.
- 6. Explain with example multiple granularity locking technique and define parital key.

# **SECTION-C**

7. Consider the following table :

Part(Partno, Supplierno, contract, partcost)

Supplier(Supplierno, snam, partno. detail)

Customer(c\_id, c\_city, partno)

Write down queries in relational algebra for getting :

- a. Name of the city with maximum number of customer.
- b. List the city of the customer who has been supplied with maximum number of parts.
- c. List the name of supplier who has been supplied part with maximum cost.
- 8. a. What is the need for concurrency control?
  - b. Explain with example serializability of a transaction?

## 9. Write in detail with example :

- a. Discretionary access control based.
- b. Domain relational calculus

ercol