

Time: 3Hrs

Marks: 80

Q1 is compulsory.

Attempt any three questions out of remaining five questions.

- Q1. Attempt All questions 20M
- (a) Explain role of DBA.
  - (b) Explain generalization in EER.
  - (c) Explain concept of log-based recovery.
  - (d) Explain DML commands with example.
- Q2. 10M
- (a) Explain Conflict and View Serializability in detail 10M
  - (b) Write SQL Queries for the following. Assume data wherever required. 10M  
Employee (Eid, Ename, Salary, Experience, Dept\_name, Location)
    - I. Find maximum salary of employees Dept\_name wise.
    - II. Change department to 'Testing' of employees who experience is less than 5 years.
    - III. Create view from employee table as employee\_record containing first 3 columns of employee table.
    - IV. Delete all entries from employee table working in 'production' Department.
- Q3. 10M
- (a) Draw EER diagram for hospital management system 10M
  - (b) Write relational algebra queries for. Assume data wherever required. 10M
    - I. Find names of employees whose location is 'Mumbai'
    - II. Find maximum salary of employee from employee table,
    - III. Find names of the employees whose Eid is greater than 3.
- Q4. 10M
- (a) Explain concept of sub queries with example 10M
  - (b) Draw and explain DBMS system architecture. 10M
- Q5. 10M
- (a) Define Normalization. Explain 2NF in detail 10M
  - (b) Draw and explain generalization and specialization in detail 10M
- Q6. Write short note on 20M
- (a) Binary Relational operation
  - (b) Types of attributes
  - (c) Foreign key with example
  - (d) Recursive Queries

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