

16/5/2026

T.E. Sem IV (C-MPH) (C-Scheme) May/2026

[Max Marks: 80]

- N.B. : (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

Questions

- 1 Attempt FOUR [20]
 a Differentiate logical data independence and physical data independence with suitable DBMS example. [5]
 b Identify weak entity and strong entity from airline reservation system with suitable example. [5]
 c What is view? Explain its syntax and example. [5]
 d Analyze conflict serializability with suitable transaction schedule. [5]
- 2 a Describe the overall architecture of DBMS with suitable diagram and real-life application. [10]
 b Detailed describe wait-die and wound-wait deadlock prevention methods. [10]
- 3 a Draw an E-R diagram for hospital management system. Convert it into relational schema. [10]
 b Demonstrate the use of following Relational Algebra operations with suitable example. 1) Project 2) Select 3) Union 4) Rename 5) Set difference [10]
- 4 a Consider the following online food delivery database. [10]
 Customer (customer_id, customer_name, city, phone_no)
 Orders (order_id, customer_id, restaurant_id, order_date, amount)
 Restaurant (restaurant_id, restaurant_name, city, rating)
 Write SQL queries for the following statements.
 1. Modify the database so that customer 'SAMI' now lives in 'Pune'.
 2. Find all orders placed in the month of December.
 3. Increase rating of all restaurants in 'Mumbai' by 0.5.
 4. Find customers whose order amount is greater than the average order amount of all orders.
 5. List names of restaurants starting with letter "S".
 b Justify the need of normalization. Illustrate 1NF, 2NF, 3NF and BCNF with suitable example. [10]
- 5 a Illustrate ACID properties using online payment system with suitable examples. [10]
 b Demonstrate Lock based Two Phase Locking (2PL) concurrency control method with example. [10]
- 6 Write short notes on the following [20]
 a Checkpoint based recovery. [05]
 b Responsibilities of DBA in banking system. [05]
 c Triggers with suitable example from inventory management system. [05]
 d Types of keys in DBMS with suitable examples. [05]
