

**DATABASE MANAGEMENT SYSTEM (25CY305)****UNIT-V**

| S. No                                  | Questions                                                                                                                | BT | CO  | PO  |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----|-----|-----|
| <b>Part –A(Short Answer Questions)</b> |                                                                                                                          |    |     |     |
| 1                                      | Define a transaction in DBMS?                                                                                            | L1 | CO5 | PO1 |
| 2                                      | List and explain the different states of a transaction?                                                                  | L2 | CO5 | PO2 |
| 3                                      | What is meant by atomicity and durability in transaction processing?                                                     | L2 | CO5 | PO2 |
| 4                                      | Define concurrent execution and mention its advantages?                                                                  | L1 | CO5 | PO1 |
| 5                                      | What is serializability? Why is it important in concurrency control?                                                     | L2 | CO5 | PO1 |
| 6                                      | Define recoverability in transaction management?                                                                         | L1 | CO5 | PO2 |
| 7                                      | What is a lock-based protocol? Give an example?                                                                          | L2 | CO5 | PO5 |
| 8                                      | Explain the basic principle of timestamp-based concurrency control?                                                      | L2 | CO5 | PO6 |
| 9                                      | What is shadow paging in recovery systems?                                                                               | L1 | CO5 | PO2 |
| 10                                     | Define buffer management and state its role in recovery systems?                                                         | L2 | CO5 | PO2 |
| <b>Part– B(Long Answer Questions)</b>  |                                                                                                                          |    |     |     |
| a)                                     | Explain the transaction concept and describe the various transaction states with a neat state transition diagram?        | L2 | CO5 | PO1 |
| b)                                     | Discuss the implementation of atomicity and durability in DBMS transaction processing?.                                  | L2 | CO5 | PO1 |
| a)                                     | Explain concurrent execution of transactions and analyze its advantages and disadvantages?                               | L4 | CO5 | PO2 |
| b)                                     | Describe serializability and explain conflict serializability and view serializability with suitable examples?           | L4 | CO5 | PO1 |
| a)                                     | Discuss recoverability in transaction processing and explain different types of recoverable schedules?                   | L2 | CO5 | PO1 |
| b)                                     | Explain the implementation of isolation in DBMS and discuss methods used for testing serializability?                    | L3 | CO5 | PO2 |
| a)                                     | Compare lock-based protocols, timestamp-based protocols, and validation-based protocols used in concurrency control.?    | L4 | CO5 | PO5 |
| b)                                     | Explain Two-Phase Locking (2PL) protocol and discuss its advantages and limitations in concurrency control?              | L2 | CO5 | PO1 |
| a)                                     | Describe log-based recovery techniques and explain how recovery is performed in the presence of concurrent transactions? | L2 | CO5 | PO1 |
| b)                                     | Compare log-based recovery and shadow paging techniques. Discuss the role of buffer management in database recovery.     | L4 | CO5 | PO1 |

**Blooms Taxonomy Level (BT)** (L1–Remembering; L2–Understanding; L3–Applying; L4–Analyzing; L5–Evaluating; L6–Creating)

**Course Outcomes (CO), Program Outcomes(PO))**



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