

Code: CS7T4B

**IV B.Tech - I Semester – Regular/Supplementary Examinations  
March - 2021**

**ADVANCED DATABASES  
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) What is meant by Query Block in translating SQL Queries into Relational Algebra?
- b) What is a Query Graph?
- c) List desirable properties of a transaction.
- d) What is meant cascadeless Schedule ?
- e) What is a predicate lock?
- f) Can you list the type of lock needed for insert and delete operations.
- g) What are intention locks?
- h) What are UNDO-type and REDO-type log entries?
- i) What is meant by transaction rollback?
- j) What are the different types of multimedia data?
- k) List some of the GIS Applications.

## PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the General Transformation Rules for Relational Algebra Operations. 8 M
- b) Describe Cost Components for Query Execution. 8 M
3. a) Discuss the different measures of transaction equivalence. What is the difference between conflict equivalence and view equivalence? 10 M
- b) Describe the dirty read, non-repeatable read, and phantoms in SQL. 6 M
4. a) How would you show your understanding of Guaranteeing Serializability by Two-Phase Locking. 8 M
- b) Explain Concurrency Control Based on Timestamp Ordering. 8 M
5. a) What are log sequence numbers (LSNs) in ARIES? How are they used? What information does the Dirty Page Table and Transaction Table contains. Describe how fuzzy check pointing is used in ARIES. 8 M

- b) Describe the shadow paging recovery technique. Under what circumstances does it not require a log? 8 M
6. a) Explain Mobile Computing Architecture. 8 M
- b) Explain about Characteristics of Biological Data. 8 M