	<u>Uiteah</u>
<i>Name</i> :	<u></u>
Roll No.:	An Annual Of Commission and Commission
Invigilator's Signature:	

## CS/M.Tech (IT)/SEM-2/PGIT-203/2013

## 2013 ADVANCED TOPICS IN DATABASE MANAGEMENT

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

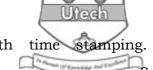
Answer any *five* questions from the following.  $5 \times 14$ 

- 1. a) What is database or database management systems (DBMS) ? What's the difference between file and database ? Can files qualify as a database ? What's difference between DBMS and RDBMS ? What is a catalog ?  $2 \times 5$ 
  - b) State the differences of advantages and disadvantages of DBMS.
- What are the various methods of controlling concurrency?
  What would happen if there is no rollback mechanism (undo mechanism) in databases? Tell with an example. What is Phantom Phenomenon?
  5 + 7 + 2

30072 (M.Tech)

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## CS/M.Tech (IT)/SEM-2/PGIT-203/2013



- 3. a) Explain concurrency control with time stamping.

  Explain with an example.
  - b) Explain about Deadlocks.

6

4. a) Give the following relations:

Vehicle (reg\_no, make, colour)

Person (eno, name, address)

Write expressions in relational algebra to answer the following queries :

- i) List the names of persons who do not own any car.
- ii) List the names of persons who own only Maruti Cars.  $2 \times 3$
- b) Define check point and its impact on database recovery.

8

- 5. Write short notes on any two of the following:
- $2 \times 7$

- a) Equivalence rules
- b) BCNF
- c) Object oriented database
- 6. What is Query Optimization ? Explain Cost-based query optimization and transformation based optimization. 4 + 5 + 5
- 7. Draw and explain the Architecture for Distributed
  Database? 6+8

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