

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-II • EXAMINATION – SUMMER 2013

Subject Code: 620006

Date: 07-06-2013

Subject Name: Database Management System - II

Time: 10.30 am - 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Explain the following 14

- 1) Cascading rollback
- 2) Locking modes
- 3) Transaction failure
- 4) Authentication & Authorization
- 5) Object Identity
- 6) Firewall
- 7) Checkpoint

Q.2 (a) 1. RAID stands for _____. 07

2. Execution plan is a series of _____.
3. _____ system is used to control the access to a statistical database.
4. Single inheritance exists when a class has _____ immediate super class above it.
5. Synchronization is the coordination of _____.
6. The middleware database architecture is also called _____.
7. The _____ operation must be idempotent.

(b) Explain any two native relational operators. 07

OR

(b) Discuss Typical steps of high-level query processing. 07

Q.3 (a) What is Relational Algebra? Explain Super key, Candidate key and Primary key with proper example. 07

(b) What is object oriented database management system? Explain advantages and disadvantages of it. 07

OR

Q.3 (a) Explain threats to database security and discretionary access control in detail. 07

(b) Discuss cost components of Query Execution. List information that is needed for the cost functions. 07

Q.4 (a) Differentiate between Deferred Database Modification and Immediate Database Modification recovery techniques. 07

(b) What is distributed database? Give desired functions of Distributed database and explain types of distributed database. 07

OR

Q.4 (a) Describe types of database failure and explain Buffer Management. **07**

Q.4 (b) Explain various architecture of Parallel database. **07**

Q.5 (a) What is Serializability? Explain conflict serializability in detail. **07**

(b) Explain two phase locking protocol. **07**

OR

Q.5 (a) What is Deadlock? Define principal methods for dealing with deadlock problems and explain deadlock prevention. **07**

(b) Describe ACID properties in brief and explain shadow copy technique. **07**
