

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-II • EXAMINATION – SUMMER • 2014

Subject Code: 620006

Date: 19-06-2014

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) Answer the following (4 +3) **07**

1. List ACID properties and explain usefulness of each with suitable example
2. Discuss advantages of concurrent execution of transaction.

(b) What do you mean by schedule? Differentiate between serial and serializable schedule and explain the concept of conflict serializability. **07**

Q.2 (a) Explain deferred database modification and immediate database modification and list difference between them. **07**

(b) Answer the following (4 + 3) **07**

1. Discuss timestamp ordering protocol
2. Explain recoverable schedule and cascade less schedule.

OR

(b) Consider following database schema where the primary key underline and write the relational algebra. **07**

Employee(empno,ename,office,age)

Book(isbn,title,authors,publisher)

Issue(empno,isbn,date)

1. List out name of employee who issue book on 30/Apr/2013 ----- (2)
2. List out title and authors for all book with publisher name start with 'A' - --- (2)
3. List out all employee name whose age more than 27 year ----- (2)
4. List out all employee who issue any book ----- (1)

Q.3 (a) In Relational Algebra, discuss, with example how DML statements can be represented? **07**

(b) Answer the following (4 + 3) **07**

1. Explain Set relational operation.
2. Explain Cartesian product.

OR

Q.3 (a) What is deadlock? Explain Deadlock detection and recovery in brief. **07**

(b) Discuss various types of access control techniques for database security. **07**

Q.4 (a) Answer the following (4 + 3) **07**

1. Discuss any five equivalence rules for transformation of relational expression.
2. Draw various forms of query evaluation plan for given a SQL query as : select ename from employee where salary > 3000.

(b) Differentiate between Database Buffering and Log Record Buffering techniques. **07**

OR

- Q.4 (a)** Why there is a need for Database Security? What is the role of DBA in database security? **07**
- (b)** Give short note on Distributed Database System. **07**
- Q.5 (a)** Discuss concept of Query Processing in brief **07**
- (b)** What do by Query Optimization? Give drawback of cost based optimization and benefit of heuristic optimization you understand. **07**
- OR**
- Q.5 (a)** Explain Forward recovery, Backward recovery, Media recovery in brief. **07**
- (b)** List out Security & integrity threats and explain. **07**
