

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-V • EXAMINATION – WINTER • 2014

Subject Code: 650004

Date: 05-12-2014

Subject Name: Advanced Data Base Management System

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)** Define/explain following terms: **07**
- (i) Dense Index
 - (ii) Digital Signature
 - (iii) SQL/CLI
 - (iv) Cascading Rollback
 - (v) Temporal GIS
 - (vi) Double Buffering
 - (vii) Conceptual Schema
- (b)** Answer the following:
- (i) State five main advantages of using DBMS. **05**
 - (ii) What is the difference between a database schema and database state. **02**
- Q.2 (a)** Discuss how time is represented in temporal databases and compare different time dimensions. What is the difference between valid time and transaction time? Explain bitemporal relations. **07**
- (b)** Describe the evolution of distributed DBMS from centralized DBMS. What are the additional functions that must be provided by DDBMS in addition to centralized DBMS. Explain each in brief. **07**
- OR**
- (b)** Define degree of local autonomy. Explain horizontal fragmentation, vertical fragmentation and mixed fragmentation in distributed database design. Give an Example. **07**
- Q.3 (a)** (i) Write merits and demerits of providing secondary indexes and primary indexes. **03**
- (ii) What are the goals of database tuning? List the types of problems encountered during tuning. **04**
- (b)** List commonly accepted threats to database security. Explain the control measures that are used to provide security of data in database. **07**
- OR**
- Q.3 (a)** (i) Differentiate between primary index and clustering index. **03**
- (ii) Illustrate any two types of changes to SQL queries that may be worth considering for improving the performance. **04**
- (b)** What are the relative merits of using DAC or MAC? What is role-based access control? How is it superior to DAC and MAC? **07**
- Q.4 (a)** Discuss different types of transaction failures. Explain terms: dirty bit, steal and no-steal, force-noforce approach in standard DBMS recovery schemes. **07**
- (b)** List additional problems that need to be considered in the context of extended ORDBMS. **07**

OR

- Q.4 (a)** Define write-ahead logging protocol. What do you mean by deferred update technique of recovery? Why it is called NO-UNDO/REDO method? What are the advantages and disadvantages of this technique? **07**
- (b)** List the object relational features included in SQL-99. Write the rules dealing with inheritance. Give an example to implement inheritance. **07**
- Q.5 (a)** What is Multimedia database? Discuss data management issues related to multimedia database. **07**
- (b)** Discuss about bulk insert using SQL*Loader. **07**
- OR**
- Q.5 (a)** Write a short note on Mobile computing architecture. **07**
- (b)** (i) Explain the concept of service name and listener in Oracle. **04**
- (ii) List and explain the basic functionality provided by Oracle Net Manager. **03**
