Seat No.: Enrolment No.
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**Subject Name: Advanced Data Base Management System** 

Subject Code: 650004

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

MCA - SEMESTER-V • EXAMINATION – WINTER • 2014

Date: 05-12-2014

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. (a) Define/explain following terms: **07 Q.1** Dense Index (i) (ii) Digital Signature (iii) SQL/CLI (iv) Cascading Rollback Temporal GIS (v) (vi) Double Buffering (vii) Conceptual Schema **(b)** Answer the following: State five main advantages of using DBMS. (i) 05 (ii) What is the difference between a database schema and database state. 02 0.2 Discuss how time is represented in temporal databases and compare different **07** time dimensions. What is the difference between valid time and transaction time? Explain bitemporal relations. Describe the evolution of distributed DBMS from centralized DBMS. What are **07** the additional functions that must be provided by DDBMS in addition to centralized DBMS. Explain each in brief. (b) Define degree of local autonomy. Explain horizontal fragmentation, vertical 07 fragmentation and mixed fragmentation in distributed database design. Give an Example. **Q.3** Write merits and demerits of providing secondary indexes and primary 03 (a) (i) indexes. (ii) What are the goals of database tunning? List the types of problems 04 encountered during tunning. (b) List commonly accepted threats to database security. Explain the control 07 measures that are used to provide security of data in database. **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 04 considering for improving the performance. What are the relative merits of using DAC or MAC? What is role-based access **07** control? How is it superior to DAC and MAC? **Q.4** Discuss different types of transaction failures. Explain terms: dirty bit, steal and 07 no-steal, force-noforce approach in standard DBMS recovery schemes. List additional problems that need to be considered in the context of extended 07 ORDBMS. OR

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

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