GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– V • EXAMINATION – SUMMER 2015

Subject Code: 650004   **Date:08/05/2015**
Subject Name: Advanced Database Management System
Time: 02:30 pm to 05:00 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)**	List different types of discretionary privileges. Give two examples of each. Explain the process of granting and revoking of privileges.	**07**
	(b)	What is the difference between Keyand Ordering Field? Explain the concept of Primary Index with diagram.	**07**
Q.2	**(a)**	Explain in brief the Three-Schema Architecture and Data Independence.	**07**
	(b)	(i) Differentiate between fixed-length records and variable-length records. What are the reasons for having variable-length records?	**07**
		(ii) What is the purpose of Dirty bit and Pin-Unpin bit?	
		OR	
	(b)	Discuss the advantages of using DBMS Approach.	**07**
Q.3	**(a)**	Differentiate between Deferred Update and Immediate Update. How does it affect UNDO and REDO operations to be performed in Recovery Process?	**07**
	(b)	What is Encryption? List any two standard private key algorithms used for encryption. Which is better and why?How private key algorithms are different than public key algorithms?	**07**
		OR	
Q.3	**(a)**	Discuss the concept of tuning the database design by de-normalization, vertical partitioning, and horizontal portioning with suitable examples.	**07**
	(b)	(i) How will you decide whether to index on an attribute or not? How will you decide whether to setup clustered index or not?	**07**
		(ii) How attribute versioning is better than tuple versioning? What do you mean by time-varying and non time-varying attributes?	
Q.4	**(a)**	What do you mean by Distributed Database? Explain advantages of Distributed Databases.	**07**
	(b)	Explain the concept of Data Fragmentation in DDBMS.	**07**
		OR	
Q.4	**(a)**	Consider R1(A, B, C)&R2(D, E, F). Explain how relational operations such as Selection, Projection, Cartesian Product, Natural Join, Intersection, Union, and Differencecan be specified as Datalog rules.	**07**
	(b)	List different types of Object-Relational support in SQL-99. Explain Type Constructors.	**07**
Q.5	**(a)**	List the characteristics of Biological Data.	**07**
	(b)	Write a short note on Intermittently Synchronized Databases.	**07**
		OR	
Q.5	**(a)**	(i) Differentiate between Raster Data Model and Vector Data Model.	**07**
		(ii) Explain in brief Global Object Name and Connect Descriptor.	
	(b)	Write a short note on Database Links.	**07**

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