Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–V • EXAMINATION – SUMMER • 2014

Subject Code: 650004 Date: 30-05-2014

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)** Explain in brief the advantages of DBMS. **07**

(b) Draw the figure to show component modules of a DBMS and their interaction. Also explain each component in brief. **07**

Q.2 **(a)** Do as directed

1. Explain in brief the reasons for a file to have variable-length records? **04**
2. Explain in brief the actions performed by DBA for database security. **03**

(b) What do you mean by Ordering field and Key field? Explain in brief the concept of Primary Index, Clustering Index, and Secondary Index. **07**

OR

(b) Write a note on Public Key Encryption. **07**

Q.3 **(a)** List different types of Discretionary Privileges. Explain propagation of privileges using the GRANT OPTION. **07**

(b) Explain different types of Multimedia data. **07**

OR

Q.3 **(a)** What are the goals of database tuning? Explain the process of tuning the indexes. **07**

(b) Explain Type Constructors and Encapsulation features of Object-Relational support in SQL-99 **07**

Q.4 **(a)** What is Temporal Database? Explain the process of incorporating time in Object-Oriented Database using attribute versioning with suitable example. **07**

(b) What is Deductive Database? Consider the following facts and rules, and answer the following queries. **07**

Facts

Friend(x, y), Friend(x, z), Friend(y, a), Friend(y, b), Friend(b, c), Friend(c, d), Friend(x, d), Friend(y, e), Friend(k, x), Friend(f, y), Friend(x, f),Friend(z, f)

Rules

Friend(X,Y):-Friend(Y,X)

CommonFriend(X,Y,Z):-Friend(X,Z), Friend(Y, Z)

CanReach(X,Y):-Friend(X,Y)

CanReach(X,Y):-Friend(X,Z), CanReach(Z, Y)

Queries

1. Friend(x, X)?
2. CommonFriend(y, z, X)?
3. CanReach(x, e)?
4. Friend(x, k)?
5. CommonFriend(k, d, X)?
6. CommonFriend(a, x, y)?

OR

Q.4	**(a)**	Explain the concept of Fragmentation and Replication in DDBMS.	**07**
	(b)	What do you mean by Active Transactions and Committed Transactions? Explain the process of UNDO and REDO in Immediate Update and Deferred Update.	**07**
Q.5	**(a)**	What do you mean by distinguished copy in distributed concurrency control? Explain the primary site technique and primary copy technique.	**07**
	(b)	What is GIS? Explain any six methods used for testing spatial relations or spatial analysis.	**07**

OR

Q.5	**(a)**	1. What is Service Names? What is the problem with client configurations using tnsnames.ora file? What are the solutions for it?	**03**
		2. Write a short note on Database Links	**04**
	(b)	What is the purpose of SQL*Loader? Discuss the processof bulk inserts with SQL*Loader in Direct Path mode.	**07**

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