

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 **04**
 1. Explain in brief the reasons for a file to have variable-length records?
 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? **07**
Explain the process of UNDO and REDO in Immediate Update and Deferred Update.

- 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 process of bulk inserts with SQL*Loader in Direct Path mode. **07**
