Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– V EXAMINATION – WINTER 2016

Subject Code: 2650004 **Date:24/11/ 2016**

Subject Name: Advanced Database Management Systems (ADBMS)

Time:10.30 am to 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 Terms: **07**

1. Redundancy
2. Conceptual data models
3. File descriptor
4. Anchor record
5. Shadowing
6. Data encryption
7. Parallel database management

(b) Discuss the main categories of data models. What is the difference between a database schema and a database state? **07**

Q.2 **(a)** Discuss Temporal Database. What are the main differences between tuple versioning and attribute versioning? **07**

(b) Attempt the following.

1. Explain what is meant by a DDBMS? **03**
2. Why is data replication useful in DDBMS? **04**

OR

(b) What is a fragment of a relation in DDBMS? How is a horizontal partitioning of a relation specified? How can a relation be put back together from a complete horizontal partitioning? **07**

Q.3 **(a)** Attempt the following.

1. Discuss the merits and demerits of providing secondary indexes and primary indexes. **03**
2. Discuss the decisions made during physical database design in RDBMS. **04**

(b) What is meant by revoking a privilege and granting a privilege? Discuss How can the GRANT OPTION propagate to other accounts without the knowledge of the owner? **07**

OR

Q.3 **(a)** Attempt the following.

1. Discuss how does insertion of a record in a block affect primary of clustering index- considering the cases of with and without overflow? **03**
2. Discuss the types of problems encountered during tuning. **04**

(b) What is the goal of encryption? Explain how the popular RSA algorithm works with an example. **07**

Q.4 **(a)** Explain Write-Ahead Logging. Describe the concept of Steal/No-Steal and Force/No-Force. What is the usage of pin-unpin bit? **07**

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

OR

Q.4 **(a)** Discuss the immediate update recovery technique in both single-user and **07**

multiuser environments. What is the difference between the UNDO/REDO and the UNDO/NO-REDO algorithms for recovery with immediate update?

(b) What are the additional problems that need to be considered in the context of extended ORDBMS? **07**

Q.5 **(a)** Attempt the following.

1. Discuss truncate command with respect to Oracle. **03**
2. Explain Redo log files and control files of Oracle database. **04**

(b) Write a short note on data management issues in Mobile Database. **07**

OR

Q.5 **(a)** Attempt the following.

1. Briefly explain the basic functionality provided by Oracle Net Manager. **03**
2. Write a short note on global temporary tables in Oracle. **04**

(b) Define Multimedia Database. Explain in detail different types of Multimedia data available in current systems. **07**

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