

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**
