

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER- V • EXAMINATION-SUMMER 2017

Subject Code: 2650004

Date: 06/06/2017

Subject Name: Advanced Database Management Systems

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)** What is Data Model and Data Abstraction. Explain in brief three categories of Data Models. How are they related to three levels of the three schema architecture? **07**
- (b)** Explain buffering of blocks. How does double buffering improve block access time? **07**
- Q.2 (a)** Explain in brief the distributed concurrency control based on a distinguished copy of a data item in DDBMS. **07**
- (b)** Explain in brief the decisions to be taken during Physical Database Design. **07**
- OR**
- (b)** What are the differences between tuple versioning and attribute versioning. Discuss the concept of attribute versioning with example. **07**
- Q.3 (a)** What is the difference between discretionary and mandatory access control **07**
- (b)** How does multilevel indexing improve the efficiency of searching an index file? Write an algorithm for searching a nondense multilevel primary index with t levels. **07**
- OR**
- Q.3 (a)** What is role-based access control? In what ways is it superior to DAC and MAC. **07**
- (b)** What are the different types of statistics required for Query tuning? **07**
- Q.4 (a)** What is Write-Ahead Logging? Explain the concept of Steal/No-Steal and Force/No-Force. What is the usage of dirty bit and pin-unpin bit? **07**
- (b)** What is GIS? Explain any four methods defined by GIS standards for testing spatial relations and spatial analysis. **07**
- OR**
- Q.4 (a)** What are the before image (BFIM) and after image (AFIM) of a data item? What is the difference between in-place updating and shadowing, with respect to their handling of BFIM and AFIM? **07**
- (b)** List Object-Relational support in SQL-99 and explain any one of them in detail. **07**
- Q.5 (a)** What is the purpose of SQL*Loader? Discuss the process of bulk inserts with SQL*Loader in Direct Path mode. **07**
- (b)** Explain infrastructure-based mobile architecture and Discuss the data management issues in Mobile Databases. **07**
- OR**
- Q.5 (a)** What is the function of service listener in oracle? Explain the purpose of SQL*Loader. **07**
- (b)** Explain the following **07**
1. Oracle Net Configuration
 2. Service name and Listener in oracle.
