

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA Integrated - SEMESTER-III • EXAMINATION – SUMMER • 2015

Subject Code: 4430604

Date: 12-05-2015

Subject Name: Database Management Systems (DMS)

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)** Explain the following terms: **07**
1. Sorting 2. Starvation 3. Data Encryption
4. Firewall 5. Checkpoints 6. Materialized views 7. Shadow Paging
- (b)** What is transaction? Explain transaction state in details. **07**
- Q.2 (a)** Fill in the blanks. **07**
1. A transaction is in _____ state after the final statement has been executed.
2. The Acid Property of transaction are (a) _____, (b) _____, (c) _____ and (d) _____.
3. Two-phase locking protocol ensures _____ serializability.
4. _____ include the detail algorithm for each operation in the expression and how the execution of the operations is coordinated
5. A transaction must preserve the _____ a database after the execution.
6. If a lock is acquired on a data item to perform a write operation, it is _____ lock.
7. An object database is a database management system in which information is represented in the form of _____.
- (b)** Explain Deadlock detection and prevention in detail. **07**
- OR**
- (b)** Differentiate between Recoverable Schedule and Cascade-less Schedule **07**
- Q.3 (a)** Explain the Timestamp methods for concurrency control. **07**
(b) Differentiate between immediate updates and differed updates **07**
- OR**
- Q.3 (a)** What is Concurrency? Explain the Serializability in detail. **07**
(b) What is database recovery? What is meant by forward and backward recovery? Explain with an example. **07**
- Q.4 (a)** Discuss the different types of transaction failure that may occur in a database environment. **07**
(b) What do you mean by the query processing? What are their objectives? **07**
- OR**
- Q.4 (a)** What is Access control? Explain the types of access control with example. **07**
(b) Explain the typical phases of the query processing **07**
- Q.5 (a)** What are basic query optimization strategies? List out the different technique. **07**
(b) Explain the architecture of parallel database system. **07**
- OR**
- Q.5 (a)** Describe the query optimization with detail block diagram. **07**
(b) Explain the Distributed database system design. **07**
