

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA - SEMESTER-II • EXAMINATION – WINTER 2015**

Subject code: 2620003

Date :04-12-2015

Subject Name: Database Management System

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. Normalization      2. Super Key      3. Metadata  
4. Additive Join      5. Redundancy      6. Atomicity  
7. Mapping cardinalities
- (b) Explain first 3 stages of Normalization **07**
- Q.2** (a) Explain the advantages of Database Management System **07**  
(b) Explain the difference between the terms serial schedule and serializable schedule **07**
- OR**
- (b) What is ERD? Explain its notation in detail. **07**
- Q.3** (a) Discuss the concept of Aggregation and Generalization with example. **07**  
(b) Discuss the features of good relational design. **07**
- OR**
- Q.3** (a) Explain RDBMS and State the difference between RDBMs and DBMS. **07**
- (b) Explain Multi value dependencies in terms of normalization. **07**
- Q.4** (a) Explain the basic structure of Relational Database. **07**  
(b) What is Transaction? Explain the Concept of Transaction. **07**
- OR**
- Q.4** (a) Define Deadlock. Discuss deadlock prevention and detection method. **07**  
**Q.4** (b) Explain the concept of Transaction. **07**
- Q.5** (a) Explain the concept of Serializability and Recoverability **07**  
(b) Explain the fundamental or relational algebra. **07**
- OR**
- Q.5** (a) Explain Lock-based protocol and its types. **07**  
(b) Write a note on Storage Manager and query processor. **07**

\*\*\*\*\*