

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER- I (New course) • EXAMINATION – WINTER- 2015

Subject Code:3715306**Date: 05/01/2016****Subject Name: Database Technologies****Time:2:30 PM to 5:00 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 do you mean by Normalization? Explain 3NF and BCNF in detail. **07**
 (b) What do you mean by parallel database? Explain inter and intra query parallelism in detail. **07**
- Q.2** (a) Explain Architecture of an Object-Oriented DBMS. **07**
 (b) Explain Following Term **07**
 1)Parallel Join
 2)Fragment and Replicate Join
 3) Parallel Nested-Loop Join
- OR**
- (b) Explain Following Term **07**
 1)Parallel sort
 2)Partitioned Join
 3)Partitioned Parallel Hash-Join
- Q.3** (a) Explain Multi version Concurrency Control Protocols. **07**
 (b) Explain The POSTGRES data model and query language. **07**
- OR**
- Q.3** (a) Explain Single Version Concurrency Control Protocols. **07**
 (b) Explain An Object-Oriented Database System Jasmine. **07**
- Q.4** (a) Design and Implementation Issues for Active Databases in enhanced data models. **07**
 (b) Explain Object Data Management Group model **07**
- OR**
- Q.4** (a) Explain ARIES Recovery Algorithm for DBMS in detail. **07**
 (b) Explain The GEMSTONE object database management system. **07**
- Q.5** (a) Explain mobile database system with architecture. Mention its advantage over RDBMS. **07**
 (b) Explain Log-Based Recovery in detail. **07**
- OR**
- Q.5** (a) Explain Three-Tier Database Server Architectures with its advantage. **07**
 (b) What do you mean by shared-disk or shared-nothing architectures? Explain cache coherency protocol. **07**
