

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- II • EXAMINATION – SUMMER 2018

Subject Code: 2620003**Date: 25/05/2018****Subject Name: DATABASE MANAGEMENT SYSTEM****Time: 10:30 AM-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 DBMS. Describe significant differences between a file-processing system and a DBMS **07**
(b) Define Primary key, Candidate key and Super key. **07**
- Q.2** (a) Explain the functional dependency with example **07**
(b) Explain 1st, 2nd & 3rd normal form with example. And explain difference between BCNF & 3NF. **07**
- OR**
- (b) Explain relation Algebra selection and projection operation with example. **07**
- Q.3** (a) Explain the Dead lock and define wait die and wound wait protocols for deadlock prevention **07**
(b) Explain Generalization, Specialization and Aggregation **07**
- OR**
- Q.3** (a) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. **07**
(b) List the ACID properties. Explain the usefulness of each with suitable example. **07**
- Q.4** (a) Define Lock and Discuss the Types of Locks. **07**
(b) Explain Aggregate Functions of SQL with suitable example. **07**
- OR**
- Q.4** (a) What is Data Dictionary? What type of information is stored in it? **07**
(b) Explain MVD (Multivalued Dependencies) with example. **07**
- Q.5** (a) What is transaction? Explain the concept of transaction. **07**
(b) Explain different level of abstraction and different user of database. **07**
- OR**
- Q.5** (a) What is JOIN? Explain SQL JOIN (any three) **07**
(b) What is system log? What is the purpose of the system log in system recovery? **07**
