

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (New) EXAMINATION – WINTER 2018

Subject Code: 2130703

Date:01/12/2018

Subject Name: Database Management Systems

Time: 10:30 AM TO 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 primary key, NOT NULL key and Unique key. **03**
(b) Explain types of database users. **04**
(c) Explain advantage of database management system over a file oriented system. **07**

- Q.2** (a) Define DDL, DML and DCL. **03**
(b) List the reason why NULL values introduces might be introduces in database. **04**
(c) Explain three level architecture of DBMS. **07**

OR

- (c) Explain different types of outer join with example. **07**
Q.3 (a) Write a note on two phase commit protocol. **03**
(b) List and explain aggregation functions with suitable example. **04**
(c) Explain specialization and generalization concepts in ER diagram with suitable example. **07**

OR

- Q.3** (a) Write a note on trigger. **03**
(b) Explain difference between strong entity set and weak entity set. **04**
(c) Define E-R diagram. Draw an E-R diagram for Library Management System. **07**
Assume relevant entities and attributes for the given system.

- Q.4** (a) Write differences between shared lock and exclusive lock. **03**
(b) Define transaction. Explain various states of transaction with suitable diagram. **04**
(c) Explain query processing step with diagram. **07**

OR

- Q.4** (a) Describe GRANT and REVOKE commands. **03**
(b) Write a note on two phase locking protocol. **04**
(c) Explain stored procedure with proper example. **07**

- Q.5** (a) What is log based recovery? Explain Immediate database modification technique for database recovery. **03**
(b) List and discuss ACID properties of transaction. **04**
(c) Write a note on conflict serializability. **07**

OR

- Q.5** (a) What is deadlock of transaction? Explain wound wait technique for prevention of deadlock. **03**
(b) What is meant by normalization? Write its need. List and discuss database anomaly during database design. **04**

(c) Consider following schema and write SQL for given statements.
employee (employee-name, street, city)
works (employee-name, company-name, salary)
company (company-name, city)
manages (employee-name, manager_name)

1. Find the names of all employees who work for First Bank Corporation.
2. Give all employees of First Bank Corporation a 10-percent raise.
3. Find the names and cities of residence of all employees who work for First Bank Corporation.
4. Find the names, street addresses, and cities of residence of all employees who work for First Bank Corporation and earn more than \$10,000.
5. Find all employees in the database who live in the same cities as the companies for which they work.
6. Find all employees in the database who do not work for First Bank Corporation.
