

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Regular / Remedial Examination December 2010****Subject code: 130703****Subject Name: Database Management System****Date: 16 /12 /2010****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) What is data independence ? Explain the difference between physical and logical data independence with example. **05**
 - (b) List the ACID properties. Explain the usefulness of each **05**
 - (c) What are the responsibilities of a DBA ? **04**
- Q.2**
- (a) Explain following Term with suitable example **06**
 (1) Primary Key (2) Candidate Key (3) Super Key (4) On delete cascade
 - (b) Write down the query for the following table where primary keys are underlined. **08**
 Person(ss#, name, address)
 Car(license, year, model)
 Accident(date, driver, damage amount)
 Owns(ss#, license)
 Log(license, date, driver)
 (1) find the total number of people whose cars were involved in accidents in 2009.
 (2) Find the number of accidents in which the cars belonging to "S.Sudarshan"
 (3) Add a new customer to the database.
 (4) Add a new accident recorded for the Santro belonging to "KORTH"
- OR**
- (b) Consider the employee data. Give an expression in SQL for the following query : **08**
 Employee(employee-name, street,city)
 Works(employee-name, company-name,salary)
 Company(company-name, city)
 Manages(employee-name, manager-name)
 (1) find the name of all employees who work for State Bank.
 (2) Find the names and cities of residence of all employees who work for State Bank.
 (3) Find all employee in the database who do not work for State Bank.
 (4) Find all employee in the database who earn more than every employee of UCO Bank.
- Q.3**
- (a) Draw E – R Diagram for the School Management System. **07**
 - (b) Explain 1NF, 2NF, 3NF and BCNF. **07**
- OR**
- Q.3**
- (a) Draw E – R Diagram for Library Management System. **07**
 - (b) Consider a relation R with five attribute A,B,C,D,E having following dependencies **07**
 : A → B, BC → E and ED → A
 a) List all Keys for R
 b) In which normal form table is, justify your answer.

- Q.4** (a) What is join ? Explain various type of joins with example **07**
(b) Write Note on Cursor and its types **07**
OR
- Q.4** (a) What is deadlock ? When it is occurs and how to avoid it ? **07**
(b) Explain Trigger with example. **07**
- Q.5** (a) Explain Strict two phase locking with it's advantage and disadvantages. **07**
(b) Explain DDL,DML,DCL **05**
(c) Define Discretionary access control **02**
OR
- Q.5** (a) Explain linear search and binary search algorithm for selection operation. **07**
(b) Write with example various built in string functions. **05**
(c) Describe Data Encryption. **02**

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