

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III EXAMINATION – SUMMER 2016

Subject Code:130703

Date:31/05/2016

Subject Name:Database Management System

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)** Draw and discuss three level structure of database management system. **07**
- (b)** Define E-R Diagram. List and explain various components of E-R diagram. **07**
Draw and explain generalization and specialization E-R diagram for Banking Management System. Assume relevant entities and attributes.
- Q.2 (a)** Consider following given relations. Assume suitable primary keys for given relations. **07**

job(job-id, job-title, minimum-salary, maximum-salary)
employee(emp-no, emp-name, emp-salary, dept-no)
deposit(acc-no, cust-name, branch-name, amount, account-date)
borrow(loan-no, cust-name, branch-name, amount)

Write SQL queries for following given statements.

1. Retrieve name of employee whose salary is between 10000 to 25000.
 2. List total deposit amount of customer who belongs to 'Bangalore' branch.
 3. Retrieve details of employee whose name begins with 'R'.
 4. Modify employee name whose employee no. is 101.
 5. Display distinct customer name whose loan number is greater than 5.
 6. Insert new record of employee.
 7. Change the name of borrow table to new-borrow table.
- (b)** List and discuss various types of database users. **07**
- OR**
- (b)** Discuss various types of joins with suitable example. **07**
- Q.3 (a)** Compare following: **07**
1. Primary key vs Foreign key
 2. Physical independence vs Logical independence
- (b)** Define Normalization. List and explain various rules (forms) of normalization with proper example. **07**
- OR**
- Q.3 (a)** Define decomposition. Give the differences between lossy and lossless decomposition with suitable example. **07**
- (b)** Write a note on query processing with suitable diagram. **07**

- Q.4 (a)** Define Transaction. Discuss ACID properties of a transaction with suitable example. **07**
- (b)** Define Serializability. Write a note on conflict serializability. **07**
- OR**
- Q.4 (a)** Draw and explain state diagram of transaction. **07**
- (b)** Define Locking. Write a note on two phase locking protocol. **07**
- Q.5 (a)** Write a note on DML and DDL statements with appropriate example. **07**
- (b)** Explain commit and rollback commands with suitable example. **07**
- OR**
- Q.5 (a)** What is cursor? List and explain various types of cursors used in PL/SQL. **07**
- (b)** Define PL/SQL. Write a note on stored procedure. **07**
