

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III • EXAMINATION – SUMMER 2015

Subject Code:130703

Date: 29/05/2015

Subject Name: DATABASE MANGEMENT SYSTEM

Time:02.30pm-05.00pm

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 data and information. Also explain advantages of DBMS. **07**
(b) Write SQL or Relational algebra statement for following. **07**
Student(Enrno, name, courseId, emailId, cellno)
Course(courseId, course_nm, duration)
1) Add a column city in student table. (1)
2) Find out list of students who have enrolled in “computer” course. (2)
3) List name of all courses with their duration. (1)
4) List name of all students start with ‘a’. (1)
5) List emailId and cellno of all mechanical engineering students. (2)
- Q.2** (a) List and explain various data models used for database design. **07**
(b) Draw an ER diagram for Event Management System. **07**
- OR**
- (b) What is Entity set? Also define Relationship set. List and explain all the symbols used to draw ER Diagram. **07**
- Q.3** (a) Define followings: Functional dependency, Trivial functional dependency, multivalve functional dependency, 1NF, BCNF, 3NF, 4NF. **07**
(b) What is normalization? Normalize following relation up to 3NF. **07**
Bank(acno, cust_name, ac_type, bal, int_rate, cust_city, branchId, branch_nm, br_city)
- OR**
- Q.3** (a) What is relational algebra? List and explain Fundamental and additional relational algebra operators. **07**
(b) What is aggregate function? Explain all aggregate functions with the help of example. **07**
- Q.4** (a) What is need of lock in DBMS? Explain shared lock and exclusive lock with the help of example. **07**
(b) What is transaction? Draw and explain life cycle of transaction. **07**
- OR**
- Q.4** (a) List and explain various issues while transactions are running concurrently in DBMS. **07**
(b) Explain two phase locking protocol. Also list advantages of this protocol. **07**
- Q.5** (a) Why we need to do recovery in DBMS? Explain various method use for that. **07**
(b) What is data dictionary? What it stores? How can this information be useful in DBMS. **07**
- OR**
- Q.5** Explain following with example(Any 4) **14**
PL/SQL block, Cursor, Trigger, Stored procedure, View
