

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-III • EXAMINATION – SUMMER 2013**

**Subject Code: 130703****Date: 29-05-2013****Subject Name: Database Management System****Time: 02.30 pm - 05.00 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)** Consider following schema and write SQL for given statements. **08**  
 Student(RollNo, Name, Age, Sex, City)  
 Student\_marks(RollNo, Sub1, Sub2, Sub3, Total, Average)  
 Write query to  
 (i) Display name and city of students whose total marks are greater than 225.  
 (ii) Display name of students who got more than 60 marks in each subject.  
 (iii) Display name of city from where more than 10 students come from.  
 (iv) Display a unique pair of male and female students.
- (b)** Explain database system 3 tier architecture with clear diagram in detail. **06**
- Q.2 (a)**
- (i) Explain any two aggregate functions of SQL. **02**  
 (ii) What is constraint in database? Explain types of constraints with suitable example. **05**
- (b)**
- (i) Draw symbols for following in ER diagram **02**  
 Relationship Set, and Primary key attribute  
 ii) Explain in detail the duties of DBA. **05**
- OR**
- (b)** Draw ER diagram for Library Management System. **07**
- Q.3 (a)**
- (i) Explain specialization and generalization concepts in ER diagram with suitable example. **04**  
 (ii) Explain 2NF with example. **03**
- (b)**
- (i) What is ON DELETE CASCADE in SQL? Explain clearly with example. **04**  
 (ii) Explain BCNF with example **03**
- OR**
- Q.3 (a)**
- (i) What is a transaction? Explain its four important properties. **04**  
 ii) What is functional dependency? Explain its usage in database design. **03**
- (b)** Consider table R(A,B,C,D,E) with FDs as A->B, BC->E and ED-> A. The table is in which normal form? Justify your answer. **07**
- Q.4 (a)** Explain various types of join with suitable example. **07**
- (b)** Explain Trigger and its types. Explain its applications and also the syntax to create it. **07**

**OR**

- Q.4** (a) Explain Two Phase Locking protocol. What are its advantages and disadvantages? **07**  
(b) Explain system recovery procedure with check point record. **07**
- Q-5** (a) Explain in detail Discretionary access control and mandatory access control. What is cursor? Explain the types of cursors. **07**  
(b) **07**
- OR**
- Q.5** (a) What is a view? What are its types? Write the syntax for creating a view. **07**  
(b) **05**  
(i) Explain the measures of finding out the cost of a query in query processing. **05**  
Explain any two string functions in SQL.  
(ii) **02**

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