Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III EXAMINATION – WINTER 2015

Subject Code:130703 **Date:21/12/2015**

Subject Name: Database management System

Time: 2:30pm to 5:00pm **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)** What is Database Management system? Explain difference between DBMS & RDBMS.What are the possible applications of DBMS? **07**

(b) What do you understand by functional dependency? Write a simple example to explain functional dependency. **07**

Q.2 **(a)** Explain Normalization. Apply all the Normalize form to following **students detail table** & write the resulting table. **07**

RollNo	Student_ Name	Address	Phone_ Number	Marks_ Maths	Marks_ Physics	Books_ Taken*

* Books_Taken: Books Taken by Students from Library

(b) Write functionalities that are required for making one School Management System in brief. Draw ER Diagram of School Management System. **07**

OR

(b) Explain mapping cardinalities and total participation with appropriate example. **07**

Q.3 **(a)** List the aggregate function available in SQL .Explain each aggregate function with example in brief. **07**

(b) Explain cursor in PL/SQL with example. **07**

OR

Q.3 **(a)** Explain detail duty of Data Base Administrator. **07**

(b) What is deadlock? What are the ways to prevent deadlock? **07**

Q.4 **(a)** What are the types of trigger available in SQL? Write trigger to add Primary Key: Student_ID in Student_Master table. Student_ID is Number. **07**

(b) What is join? Explain various types of joins with example. **07**

OR

Q.4 **(a)** Explain ACID Properties of transaction with appropriate example. **07**

(b) Explain candidate key, primary key and foreign key with example. **07**

Q.5 **(a)** Explain working of two phase commit protocol. **07**

(b) What is Stored Procedure in PL/SQL? Write a Stored procedure to Insert Data in Student_Detail [Student_id,Name,Age,Class] table. **07**

OR

Q.5 **(a)** we have following relations: **07**

Vender(V#,vname,status,city) [Note : Status can have two values : Active,Passive],

Parts(P#,pname,code,weight,city),VP(V#,P#,quantity)

Answer the following queries in SQL.

A. Find name of Vender for city = ‘Ahmedabad’.

B. Find Venders whose name start with ‘D’

C. Find all Venders whose status is “Active”.
D. Find total number of city of all Venders.
E. Find V# of Venders who supplies ‘code = AXR123’ part.
F. Count number of Venders who supplies ‘red’ parts.
G. Sort the parts table by pname in ascending order.

(b) Consider following schema and represent given statements in relation algebra form. **07**

- Branch(branch_name,branch_city) ,• Account(branch_name, acc_no, balance)
- Depositor(Customer_name, acc_no)

1. Find out list of customer who have account at ‘Baroda HO’ branch.
2. Find out all customers who have account in ‘Ahmedabad’ city and balance is greater than 10,000.
3. Find out list of all branch names with their maximum balance.

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