

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Semester -IV Remedial Examination June - 2011****Subject code: 340704****Subject Name: Relational Database Management System****Date: 08 / 06 /2011****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.
4. English version is Authentic

- Q.1** (a) Explain Commit and Rollback command of SQL*Plus. **06**
 (b) What is functional dependency? Write steps and algorithm to find redundant functional dependency. **08**
- Q.2** (a) What is normalization? Explain First, Second and Third normal forms with an example. **07**
 (b) Define PL/SQL. Explain explicit cursor in PL/SQL. **07**
- OR**
- (b) Write PL/SQL block to display employee details of each employee for the given deptno using explicit cursor. (Read deptno from user) (Employee Table: Empno, ename, job, hiredate, sal, commission, deptno) **07**
- Q.3** (a) Define package. Write steps to create package in PL/SQL. **07**
 (b) Write a PL/SQL program to update the salary of all analysts with 5%. Update the salary of all employees with 20%. If total salary of all employees exceeds than Rs.1, 00,000 then undo the 20% raise. **07**
- OR**
- Q.3** (a) Define trigger. Explain trigger in PL/SQL with an example. **07**
 (b) Create a trigger, which will store the old information of employee after giving 15% raise to him. **07**
- Q.4** (a) Remove any redundant functional dependencies from the following sets of FD's. {XY->V, ZW->V, VX->Y, W->Y, Z->X}. **04**
 (b) Given R with attributes A, B, C, D, E, F and S as: **03**
 $A \rightarrow BC, E \rightarrow CF, B \rightarrow E, CD \rightarrow EF$
 Calculate the closure to {A, B}⁺ of the set {A, B} under S.
 (c) What are ACID properties of database transactions? Discuss each of these properties and how they are relate to the concurrency control. **07**
- OR**
- Q. 4** (a) Explain immediate update and differed update recovery techniques. **07**
 (b) What do you mean by threat in a database environment? List the potential threats that could affect a database system. **07**
- Q.5** (a) Discuss each of the following terms: 1) Audit Trail 2) Firewall. **07**
 (b) Following relation for published books is given **07**
 BOOK (BOOK-TITLE, AUTH-NAME, BOOK-TYPE, LIST-PRICE, AUTH-AFFL, PUBLISHER)
 AUTH-AFFL refers to the affiliation of author. Suppose that the following FDs exist.

BOOK-TITLE->PUBLISHER, BOOK-TYPE

BOOK-TYPE->LIST-PRICE

AUTH-NAME->AUTH-AFFL

What normal form is the relation in? Explain your answer.

Apply normalization until the relations cannot be decomposed any further. State the reason behind each decomposition

OR

- Q.5** (a) Discuss the different types of transactions failures that may occur in database environment. **07**
- (b) Define the violations caused by the followings. **07**
1. Lost updates.
 2. Dirty Read (or uncommitted data)
 3. Unrepeatable read (or inconsistent retrievals)

- Q.1** (a) સમજાવો: Commit and Rollback command of SQL*Plus. **06**
- (b) ફંક્શનલ ડીપેન્ડેન્સી શું છે? Redundant ફંક્શનલ ડીપેન્ડેન્સી શોધવા માટે મુદ્દા અને અલગોરીધમ લખો. **08**

- Q.2** (a) નોર્મલઈઝેશન શું છે? પ્રથમ, બીજું તેમ જ ત્રીજું નોર્મલ ફોર્મ ઉદાહરણ આપીને સમજાવો. **07**

- (b) વ્યાખ્યા આપો: PL/SQL. PL/SQLનું explicit cursor સમજાવો. **07**

OR

- (b) Write PL/SQL block to display employee details of each employee for the given deptno using explicit cursor. (Read deptno from user) (Employee Table: Empno, ename, job, hiredate, sal, commission, deptno) **07**

- Q.3** (a) વ્યાખ્યા આપો . પેકેજ. PL/SQLમાં પેકેજ બનાવવા માટેનાં મુદ્દા લખો. **07**
- (b) Write a PL/SQL program to update the salary of all analysts with 5%. Update the salary of all employees with 20%. If total salary of all employees exceeds than Rs.1, 00,000 then undo the 20% raise. **07**

OR

- Q.3** (a) વ્યાખ્યા આપો : Trigger. PL/SQLમાં બનાવવા માટેનાં મુદ્દા ઉદાહરણ આપીને સમજાવો. **07**

- (b) Create a trigger, which will store the old information of employee after giving 15% raise to him. **07**

- Q.4** (a) નીચેની ફંક્શનલ ડીપેન્ડેન્સીમાંથી Redundant ફંક્શનલ ડીપેન્ડેન્સી જો હોય તો દૂર કરો. {XY->V, ZW->V, VX->Y, W->Y, Z->X}. **04**

- (b) આપેલ R નાં ફિલ્ડ A, B, C, D, E, F તેમ જ સેટ S પરથી **03**
- $A \rightarrow BC, E \rightarrow CF, B \rightarrow E, CD \rightarrow EF$
- {A, B}+ નો ક્લોઝર શોધો.

- (c) ડેટાબેઈઝ ટ્રાંઝેક્શનની ACID લાક્ષણિકતા શું છે? દરેક લાક્ષણિકતા સમજાવો તેમ જ તે કોંકરીંસી કંટ્રોલમાં કેવી રીતે સંકળાયેલ છે? **07**

OR

- Q. 4** (a) Immediate update અને differed update રીકવરી ટેકનીક સમજાવો. **07**

- (b) ડેટાબેઈઝ વાતાવરણમાં threat શું છે ? ડેટાબેઈઝ સીસ્ટમને અસર કરી શકે તેવા potential threatsની યાદી આપો. **07**

Q.5 (a) નીચેની terms સમજાવો. : 1) Audit Trail 2) Firewall. **07**

(b) Following relation for published books is given **07**

BOOK (BOOK-TITLE, AUTH-NAME, BOOK-TYPE, LIST-PRICE, AUTH-AFFL, PUBLISHER)
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ઉપરનો રીલેશન કયા નોર્મલ ફોર્મમાં છે? તમારો જવાબ સમજાવો.

ઉપરનાં રીલેશન ને decompose કરીને નોર્મલઈઝ કરો .

દરેક decompose કરતી વખતે તેનું કારણ આપો.

OR

Q.5 (a) ડેટાબેઈઝના વાતાવરણમાં ઉદભવી શકતા જુદા જુદા પ્રકારના ટ્રાંઝેક્શન **07**

ફીઈલોયર સમજાવો.

(b) નીચેનાથી ઉદભવતા violations સમજાવો. **07**

4. Lost updates.

5. Dirty Read (or uncommitted data)

6. Unrepeatable read (or inconsistent retrievals)
