

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – IV-EXAMINATION – WINTER 2015

Subject Code: 3341605**Date: 04/12/2015****Subject Name: Database Management****Time: 02:30 PM TO 5:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

Q.1 Answer any seven out of ten. દશમાંથી કોઈપણ સાતના જવાબ આપો. **14**

1. List out types of database system.
૧. Database systemના પ્રકારો લખો.
2. Define super key.
૨. Super keyની વ્યાખ્યા આપો.
3. List out DML command of SQL.
૩. SQLના DML command લખો.
4. Define Prime attribute.
૪. Prime attributeની વ્યાખ્યા આપો.
5. List types of Join.
૫. Joinના પ્રકારો લખો.
6. Describe functional dependency.
૬. Functional dependencyનું વર્ણન કરો.
7. List four aggregate functions in SQL.
૭. SQLના ચાર aggregate functions લખો.
8. Define Metadata.
૮. Metadataની વ્યાખ્યા આપો.
9. Describe foreign key.
૯. Foreign keyનું વર્ણન કરો.
10. List out all constraints of oracle.
૧૦. oracleના બધા constraintsના નામ લખો.

Q.2 (a) Differentiate Primary key & Unique key. **03**

પ્રશ્ન. (અ) Primary key અને Unique key નો તફાવત લખો. **03**

૨

OR

(a) Explain entity integrity constraints. **03**

(અ) Entity integrity constraints સમજાવો. **03**

(b) Consider a following relational schema & give Relational Algebra **03**

Expressions for following queries.

Employee(Emp_name, Emp_id, birth_date, Post, salary)

(i) List out all Employees having Post="Manager".

(ii) Find out only Emp_id and Emp_name having salary greater than 40000.

(બ) નીચેની relational schema ને આધારે નીચેની queries માટે Relational 03

Algebra Expressions આપો.

Employee(Emp_name, Emp_id, birth_date, Post, salary)

(i) List out all Employees having Post="Manager".

(ii) Find out only Emp_id and Emp_name having salary greater than 40000.

OR

(b) Explain select operation and project operation in a relational algebra with example. 03

(બ) Relational algebraનું select operation અને project operation ઉદાહરણ સાથે સમજાવો. 03

(c) Explain any four disadvantage of file oriented system. 04

(ક) File oriented systemનું કોઈ પણ ચાર disadvantage સમજાવો. 04

OR

(c) Explain relational model of DBMS. 04

(ક) DBMSનું relational model સમજાવો. 04

(d) Explain fully functional dependency with example. 04

(ડ) Fully functional dependency ઉદાહરણ સાથે સમજાવો. 04

OR

(d) Explain second Normal Form (2NF) with example. 04

(ડ) Second Normal Form (2NF) ઉદાહરણ સાથે સમજાવો. 04

Q.3 (a) Explain attributes of entity with example. 03

પ્રશ્ન.3 (અ) Entityનું attributes ઉદાહરણ સાથે સમજાવો. 03

OR

(a) Design an E-R diagram of a Library. 03

(અ) Library નો E-R diagram Design કરો. 03

(b) Explain insertion anomalies. 03

(બ) Insertion anomalies સમજાવો. 03

OR

(b) Explain normalization. 03

(બ) Normalization સમજાવો. 03

(c) Create following table having following specification. 04

STUDENT: (stu_id, stu_name, Address, City, contact_no, Branch_name)

(i) Define stu_id as a primary key.

(ii) Stu_id must start with 'S'.

(ક) નીચે પ્રમાણેના specification સાથે નીચેનું ટેબલ બનાવો. 04

STUDENT: (stu_id, stu_name, Address, City, contact_no, Branch_name)

(i) Define stu_id as a primary key.

(ii) Stu_id must start with 'S'.

OR

(c) Create following table having following specification. 04

STUDENT: (stu_id, stu_name, Address, City, contact_no, Branch_name)

- (i) Define stu_name as not null.
- (ii) Student branch must be 'IT', 'Electrical', 'Mechanical' or 'Civil'.

(ક) નીચે પ્રમાણેના specification સાથે નીચેનું ટેબલ બનાવો. 0૪

STUDENT: (stu_id, stu_name, Address, City, contact_no, Branch_name)

- (i) Define stu_name as not null.
- (ii) Student branch must be 'IT', 'Electrical', 'Mechanical' or 'Civil'.

(d) Explain following function with example. 04

- (i) Next_day()
- (ii) Initcap()

(૫) નીચેના function ઉદાહરણ સાથે સમજાવો. 0૪

- (i) Next_day()
- (ii) Initcap()

OR

(d) Explain following function with example. 04

- (i) To_char()
- (ii) floor()

(૫) નીચેના function ઉદાહરણ સાથે સમજાવો. 0૪

- (i) To_char()
- (ii) floor()

Q.4 (a) Explain delete anomalies. 03

પ્રશ્ન. ૪ (અ) Delete anomalies સમજાવો. 03

OR

(a) Explain transit functional dependency. 03

(અ) Transit functional dependency સમજાવો. 03

(b) Explain generalization. 04

(બ) Generalization સમજાવો. 0૪

OR

(b) Explain natural join operation of RDBMS. 04

(બ) RDBMSના natural join operation સમજાવો. 0૪

(c) Write SQL queries for the following table: 07

PRODUCT_Master: (prod_no, prod_name, profit, percentage, quantity, sell_price, cost_price)

- (i) Create table PRODUCT_Master.
- (ii) Insert one record in this table.
- (iii) Find out product name having no duplicate data.
- (iv) Find out product having maximum profit.
- (v) Delete product having zero quantity.
- (vi) Add 2% profit in product having sell price is greater than 5000.
- (vii) Add new field total_price to PRODUCT_Master.

(ક) નીચેના ટેબલ માટે SQL queries લખો. 0૭

PRODUCT_Master: (prod_no, prod_name, profit, percentage, quantity, sell_price, cost_price)

- (i) Create table PRODUCT_Master.
- (ii) Insert one record in this table.
- (iii) Find out product name having no duplicate data.
- (iv) Find out product having maximum profit.
- (v) Delete product having zero quantity.
- (vi) Add 2% profit in product having sell price is greater than 5000.
- (vii) Add new field total_price to PRODUCT_Master.

Q.5 (a) Explain Data independence. 04

પ્રશ્ન. ૫ (અ)	Data independence સમજાવો.	૦૪
(b)	Explain subqueries in SQL.	૦૪
(બ)	SQLની subqueries સમજાવો.	૦૪
(c)	Explain check constraints with example.	૦૩
(ક)	Check constraints ઉદાહરણ સાથે સમજાવો.	૦૩
(d)	Explain following SQL command with example. (i) Group by (ii) Order by.	૦૩
(ડ)	નીચેના SQL command ઉદાહરણ સાથે સમજાવો. (i) Group by (ii) Order by.	૦૩
