

GUJARAT TECHNOLOGICAL UNIVERSITY

DI -3 SEMESTER – OLD PAPER – S23 TO S25 – QUESTION BANK(English)

Subject Name & Code:

Relational Database Management System- 4330702

Unit I - Introduction to Database System and SQL commands

Repeated Questions:

1. **Explain DCL commands with suitable example.**
 - Appeared in: SUM 23 (Q1c OR, 07 marks), WIN 24 (Q1c, 07 marks), WIN 23 (Q2c OR, 07 marks)
2. **Explain TCL commands with suitable example.**
 - Appeared in: WIN 23 (Q1c, 07 marks), WIN 24 (Q1c OR, 07 marks), SUM 23 (Q1c, 07 marks)
3. **Explain DDL commands with suitable example.**
 - Appeared in: SUM 24 (Q1c, 07 marks), SUM 23 (Q1c OR, 07 marks)
4. **Define DBMS. Write advantages of DBMS over File oriented system.**
 - Appeared in: WIN 24 (Q1a, 03 marks), SUM 23 (Q1a, 03 marks)
5. **Differentiate between Data and Information.**
 - Appeared in: SUM 24 (Q1b(i), 04 marks), SUM 25 (Q1a, 03 marks)
6. **Define: Fields, Records, Metadata**
 - Appeared in: SUM 24 (Q1a, 03 marks), SUM 25 (Q1b, 04 marks)
7. **Differentiate between DELETE and DROP.**
 - Appeared in: WIN 23 (Q2a, 03 marks), SUM 23 (Q1b(i), 04 marks)
8. **Differentiate between DELETE and TRUNCATE.**
 - Appeared in: WIN 23 (Q2a, 03 marks)

Other Important Questions:

1. **Explain responsibilities of Database Administrator.**
 - Appeared in: WIN 23 (Q1a, 03 marks)
2. **Compare and Contrast file Systems with database systems.**
 - Appeared in: WIN 23 (Q1b, 04 marks)

3. **Define Schema, Sub Schema and Instances.**
 - Appeared in: **SUM 24 (Q2a, 03 marks), SUM 23 (Q2a OR, 03 marks)**
4. **Define Normalization and State requirement of normalization.**
 - Appeared in: **SUM 23 (Q2a, 03 marks)**
5. **Explain the purpose of SAVEPOINT command.**
 - Appeared in: **SUM 23 (Q2b, 04 marks)**
6. **Explain Data Manipulation language.**
 - Appeared in: **WIN 23 (Q1c OR, 07 marks)**
7. **Differentiate between GRANT and REVOKE.**
 - Appeared in: **WIN 23 (Q2a OR, 03 marks)**
8. **Differentiate between ORDER BY and GROUP BY.**
 - Appeared in: **SUM 23 (Q1b(ii), 04 marks)**
9. **Differentiate CHAR vs VARCHAR.**
 - Appeared in: **SUM 24 (Q1b(ii), 04 marks)**
10. **Solve SQL queries for a given table (Creation, Display, Alter, Update, etc.).**
 - Appeared in: **WIN 24 (Q1b, 04 marks), SUM 23 (Q2b, 04 marks), SUM 25 (Q1c, 07 marks)**
11. **Explain Data Control language with suitable example.**
 - Appeared in: **SUM 25 (Q1c OR, 07 marks)**
12. **Explain Transactional Control Commands (TCL) with examples.**
 - Appeared in: **WIN 23 (Q1c, 07 marks)**

Unit II - SQL In-built functions and Joins

Repeated Questions:

1. **Explain SQL Date Functions (Give syntax and examples of any 4).**
 - Appeared in: SUM 24 (Q2b, 04 marks)
2. **Explain SQL Character Functions (Give syntax and examples of any 4).**
 - Appeared in: SUM 24 (Q2b OR, 04 marks)
3. **List and Explain different types of Joins. Explain any three in detail with example.**
 - Appeared in: SUM 23 (Q3c, 07 marks), WIN 24 (Q2c, 07 marks)
4. **Define Joins. List different types of Joins. Explain Inner Join and Outer Join using example tables.**
 - Appeared in: WIN 24 (Q2c, 07 marks)
5. **Define Subquery. List types of Subqueries. Provide each type with an example.**
 - Appeared in: SUM 24 (Q2c OR, 07 marks), WIN 24 (Q2c OR, 07 marks)
6. **Explain SQL Set Operators with Examples.**
 - Appeared in: SUM 24 (Q2c, 07 marks)
7. **Explain the following SQL functions: MONTHS_BETWEEN, ROUND, FLOOR, TO_NUMBER.**
 - Appeared in: SUM 23 (Q3b, 04 marks), WIN 24 (Q2b OR, 04 marks)
8. **Explain the following SQL functions: ADD_MONTHS, LTRIM, MOD, TO_CHAR.**
 - Appeared in: WIN 24 (Q2b, 04 marks)

Other Important Questions:

1. **Explain Single row functions.**
 - Appeared in: SUM 23 (Q3a, 03 marks)
2. **Explain the following SQL functions: SUM, INITCAP, TO_CHAR, GREATEST.**
 - Appeared in: SUM 23 (Q3b OR, 04 marks)
3. **Define Correlated sub-query. Explain with example.**
 - Appeared in: SUM 23 (Q3a OR, 03 marks)
4. **Explain SQL Operators.**
 - Appeared in: SUM 23 (Q3c OR, 07 marks)
5. **Explain IN and NOT IN operators in SQL.**
 - Appeared in: WIN 23 (Q2b, 04 marks)
6. **List out types of Outer-joins. Illustrate each type with example.**

- Appeared in: **WIN 23 (Q2c, 07 marks)**
- 7. **Describe GROUP BY and ORDER BY clause with example.**
 - Appeared in: **WIN 24 (Q2a, 03 marks), WIN 23 (Q2b OR, 04 marks)**
- 8. **Describe Union, Intersect and Minus operations of relational algebra.**
 - Appeared in: **WIN 24 (Q2a OR, 03 marks)**
- 9. **Explain Dual Table and SYSDATE with example.**
 - Appeared in: **SUM 25 (Q2a, 03 marks)**
- 10. **Describe Following SQL Functions: Length(), INITCAP(), UPPER(), LTRIM().**
 - Appeared in: **SUM 25 (Q2b, 04 marks)**
- 11. **Explain Logical Operator with example.**
 - Appeared in: **SUM 25 (Q2a OR, 03 marks)**
- 12. **Illustrate Aggregate Functions with example.**
 - Appeared in: **SUM 25 (Q2b OR, 04 marks)**
- 13. **Explain Set Operations of relational Algebra with example.**
 - Appeared in: **SUM 25 (Q2c OR, 07 marks)**
- 14. **Write SQL Queries for a given table (Train_list) involving various functions and clauses.**
 - Appeared in: **WIN 23 (Q2c, 07 marks)**

Unit III - Database Integrity Constraints & Objects

Repeated Questions:

1. **Define View. List out types of view. Write advantages of view.**
 - Appeared in: WIN 24 (Q3b, 04 marks), SUM 23 (Q4b OR, 04 marks)
2. **Explain Domain Integrity Constraints with example.**
 - Appeared in: SUM 24 (Q3b, 04 marks), WIN 23 (Q3b, 04 marks), SUM 23 (Q4c OR, 07 marks)
3. **Explain Entity Integrity Constraints with example.**
 - Appeared in: SUM 24 (Q3b OR, 04 marks), SUM 23 (Q4c, 07 marks)
4. **Define Index. Explain all types of Indexes in details.**
 - Appeared in: WIN 23 (Q3c, 07 marks)
5. **Describe how to create and destroy Sequence with syntax and example.**
 - Appeared in: SUM 25 (Q3c OR, 07 marks)
6. **Write and Explain the command to create a sequence with all options.**
 - Appeared in: SUM 23 (Q4b, 04 marks), WIN 24 (Q3b OR, 04 marks)
7. **Define: Primary Key, Foreign Key, Unique Key**
 - Appeared in: SUM 25 (Q3a, 03 marks)

Other Important Questions:

1. **Define Constraints. List out different types of constraints in SQL.**
 - Appeared in: WIN 24 (Q3a, 03 marks)
2. **What is Outer Join? Give example with query.**
 - Appeared in: SUM 24 (Q3a, 03 marks)
3. **What is Self-Join? Give an example with a query.**
 - Appeared in: SUM 24 (Q3a OR, 03 marks)
4. **Create a schema with details for two entities (Employee & Department) with specified constraints.**
 - Appeared in: SUM 24 (Q3c, 07 marks)
5. **Write a sequence with all options and show with example how to use it to insert unique values in a table.**
 - Appeared in: SUM 24 (Q3c OR, 07 marks)
6. **Define View with an example.**
 - Appeared in: SUM 24 (Q4a, 03 marks)
7. **Describe Synonym with example in SQL. Also write down query for creating synonym.**

- Appeared in: WIN 24 (Q3c, 07 marks)
- 8. **Describe Index with example in SQL. Also write down query for creating index.**
 - Appeared in: WIN 24 (Q3c OR, 07 marks)
- 9. **Define Database Objects. List out different types of Database Objects in SQL.**
 - Appeared in: WIN 24 (Q3a OR, 03 marks)
- 10. **How to create an Index and write Advantages and disadvantages of an Index.**
 - Appeared in: SUM 24 (Q4a OR, 03 marks)
- 11. **Explain Sub queries concept with syntax and example.**
 - Appeared in: WIN 23 (Q3a, 03 marks)
- 12. **Discuss how to add a NOT NULL column to a table?**
 - Appeared in: WIN 23 (Q3a OR, 03 marks)
- 13. **Explain Referential integrity constraints with syntax and example.**
 - Appeared in: WIN 23 (Q3b OR, 04 marks)
- 14. **Define Sequence and Explain the command to create a Sequence with any six options.**
 - Appeared in: WIN 23 (Q3c OR, 07 marks)
- 15. **Explain Not Null and Check Constraints.**
 - Appeared in: SUM 25 (Q3b, 04 marks)
- 16. **Describe how to create and destroy index with syntax and example.**
 - Appeared in: SUM 25 (Q3c, 07 marks)
- 17. **Differentiate Column level Constraint V/s Table level Constraint.**
 - Appeared in: SUM 25 (Q3a OR, 03 marks)
- 18. **Explain Types of Views with example.**
 - Appeared in: SUM 25 (Q3b OR, 04 marks)
- 19. **Write SQL Queries for creating tables with Primary Key and Foreign Key.**
 - Appeared in: WIN 23 (Q4b, 04 marks)

Unit IV - PL/SQL and Triggers

Repeated Questions:

1. **Define PL/SQL. Explain the advantages of PL/SQL over SQL.**
 - Appeared in: SUM 23 (Q4a OR, 03 marks), WIN 24 (Q4b, 04 marks), SUM 24 (Q4b, 04 marks)
2. **Define Cursor. List out types of cursors. Describe cursors with example.**
 - Appeared in: WIN 24 (Q4c OR, 07 marks), SUM 24 (Q4c, 07 marks)
3. **Define Trigger. List out types of Triggers. Describe triggers with example.**
 - Appeared in: WIN 24 (Q4c, 07 marks), SUM 23 (Q5c, 07 marks), SUM 24 (Q4c OR, 07 marks)
4. **Write a PL/SQL program to print numbers from 1 to 10 and their square values using a loop.**
 - Appeared in: SUM 23 (Q5b, 04 marks), WIN 24 (Q4b OR, 04 marks), WIN 23 (Q5b, 04 marks)
5. **Explain Pre-defined Exceptions. Explain any 2 of them.**
 - Appeared in: SUM 24 (Q4b OR, 04 marks)

Other Important Questions:

1. **Explain PL/SQL basic structure.**
 - Appeared in: SUM 24 (Q4b, 04 marks)
2. **What is Cursor? Write Types of Cursors. Write a sample program using cursor.**
 - Appeared in: SUM 24 (Q4c, 07 marks)
3. **Explain Conditional Control Structure in PL/SQL with example.**
 - Appeared in: SUM 24 (Q5a, 03 marks)
4. **Explain Iterative Control Structure in PL/SQL with example.**
 - Appeared in: SUM 24 (Q5a OR, 03 marks)
5. **Write a PL/SQL program to print greatest from three given numbers.**
 - Appeared in: WIN 24 (Q5b, 04 marks)
6. **Write a PL/SQL program to print even number between 1 to 20.**
 - Appeared in: WIN 24 (Q5b OR, 04 marks)
7. **Define Procedure, Function and Exceptions.**
 - Appeared in: WIN 24 (Q4a, 03 marks)
8. **Explain WHILE loop in PL/SQL.**
 - Appeared in: WIN 24 (Q4b OR, 04 marks)

9. **Define Datatypes. List out different datatypes in PL/SQL.**
 - Appeared in: WIN 24 (Q4a OR, 03 marks)
10. **Explain System defined Exceptions.**
 - Appeared in: SUM 23 (Q5a OR, 03 marks)
11. **Explain Implicit Cursors.**
 - Appeared in: SUM 23 (Q5a, 03 marks)
12. **Explain structure of a package.**
 - Appeared in: WIN 23 (Q4a, 03 marks)
13. **Differentiate Procedure and Function.**
 - Appeared in: WIN 23 (Q4a OR, 03 marks)
14. **Briefly Explain Datatypes of PL/SQL.**
 - Appeared in: SUM 25 (Q4a, 03 marks)
15. **Describe how to declare variable and constant with syntax and example.**
 - Appeared in: SUM 25 (Q4b, 04 marks)
16. **Explain advantages of PL/SQL.**
 - Appeared in: SUM 25 (Q4c, 07 marks)
17. **Explain How to display message in PL/SQL.**
 - Appeared in: SUM 25 (Q4a OR, 03 marks)
18. **Explain PL/SQL Block Structure.**
 - Appeared in: SUM 25 (Q4c OR, 07 marks)

Unit V - Normalization

Repeated Questions:

1. **Explain 2NF with suitable example.**
 - Appeared in: SUM 24 (Q5c, 07 marks), WIN 24 (Q5c, 07 marks), SUM 23 (Q5c, 07 marks), SUM 25 (Q5c, 07 marks)
2. **Explain 3NF with suitable example.**
 - Appeared in: SUM 24 (Q5c OR, 07 marks), WIN 24 (Q5c OR, 07 marks), SUM 23 (Q5c, 07 marks), SUM 25 (Q5c OR, 07 marks)
3. **Write advantages and disadvantages of Normalization.**
 - Appeared in: SUM 24 (Q5b, 04 marks), WIN 24 (Q5a, 03 marks), SUM 23 (Q5b OR, 04 marks)
4. **Define Normalization. Write applications of Normalization.**
 - Appeared in: WIN 24 (Q5a OR, 03 marks), SUM 23 (Q2a, 03 marks)
5. **Explain 1NF with example.**
 - Appeared in: WIN 23 (Q5a, 03 marks), SUM 23 (Q5c, 07 marks)

Other Important Questions:

1. **Explain 1NF, 2NF with Example.**
 - Appeared in: SUM 24 (Q5c, 07 marks)
2. **Design and normalize a schema as per given details (Student, Department, Hostel).**
 - Appeared in: SUM 24 (Q5b OR, 04 marks)
3. **Explain requirements for 3NF. Give an example of tables not in 3NF and how to convert it.**
 - Appeared in: SUM 24 (Q5c OR, 07 marks)
4. **Differentiate between 2NF and 3NF.**
 - Appeared in: WIN 23 (Q5c, 07 marks)
5. **Explain Advantages and Disadvantages of Normalization.**
 - Appeared in: WIN 23 (Q5c OR, 07 marks)
6. **Illustrate 3NF with example.**
 - Appeared in: WIN 23 (Q5a OR, 03 marks)
7. **Explain Briefly: Update anomaly, Insertion anomaly, Deletion Anomaly.**
 - Appeared in: SUM 25 (Q5a, 03 marks)
8. **Write a Short note on: Functional Dependencies.**
 - Appeared in: SUM 25 (Q5b, 04 marks)
9. **Differentiate: Prime attributes v/s Non-Prime attributes.**
 - Appeared in: SUM 25 (Q5a OR, 03 marks)
10. **Convert below table into 1st normal form.**
 - Appeared in: SUM 25 (Q5b OR, 04 marks)
