

- Q.1 Explain any two aggregate functions in SQL with example.
- Q.2 Explain the sub queries and correlated queries with example.
- Q.3 Differentiate between DDL and DML commands in SQL.
- Q.4 Given the relation schema below, Write SQL query for the following:
EMP (empno, ename, job, hiredate, mgr, sal, comm, deptno)
DEPT (deptno, dname, location)
- (i) Display the names of all employees whose salary is greater than 1000.
 - (ii) Display the names of all employees who are working in SALES department.
 - (iii) Display the total number of employees in each department.
 - (iv) Display the name of employee along with its department name.
 - (v) Delete all the employees whose salary is greater than his commission.
- Q.5 Define Super key.
- Q.6 What is SQL? Discuss DDL and DML with example.
- Q.7 What are various aggregate operators on SQL?? Explain in brief.
- Q.8 What do you mean by constraints? What are the different types of constraints possible in relational model?
- Q.9 Define data definition language.
- Q.10 Explain the concept of referential integrity.
- Q.11 What do you mean by triggers? Explain.
- Q.12 Explain cursor with example.
- Q.13 Explain Group by with example.
- Q.14 Explain various integrity constraints specified on SQL with example.
- Q.15 What is a cursor? Explain cursor attributes with example.
- Q.16 Given relational schema below:
Supplier (sno, sname, status, city)
Parts (pno, pname, color, weight)
Supplies (sno, pno, qty)
Write SQL queries for following:
- (i) Get supplier names for suppliers who supply part P2.
 - (ii) Get supplier numbers for suppliers who supply at least on red part.
 - (iii) Get all shipments where the quantity is between 400 and 850 inclusive.

- (iv) Get all part number which are supplied to supplier who live in London.
- (v) Get supplier number who supplies maximum quantity.
- (vi) Increase the quantity of part P1 by 10%.
- (vii) Change the color of Red parts to Green.

Q.17 List two reasons why null values might be introduced into the database.

Q.18 What are joins and its types with example.

Q.19 Explain with example:

- (i) group by and having clause
- (ii) selection and projection

Q.20 Explain triggers and complex integrity constraints in SQL. Give example of each.

Q.21 Let the following relation schemas be given: $R = (A, B, C)$, $S = (D, E, F)$. Let $r(R)$ and $s(S)$ be given. Give an expression in SQL that is equivalent to each of the following queries.

- a. $\Pi_A(r)$
- b. $\sigma_{B=17}(r)$
- c. $r \times s$
- d. $\Pi_{A,F}(\sigma_{C=D}(r \times s))$

Q.22 Consider the employee database given below. The primary keys are underlined. Assume relevant data types for attributes.

EMPLOYEE (employee-name, street, city)

WORKS (employee-name, company-name, salary)

COMPANY (employee-name, manager-name)

Solve the following queries:

- (i) Find the names, street address, and cities of residence for all employees who work for 'First bank corporation' and earn more than \$10,000.
- (ii) Find the names of all employees in the database who live in the same cities as the companies for which they work.
- (ii) Find the average salary company wise and display it with the heading "Average Salary".

Q.23 Define primary key and write SQL query for dummy table to create primary key.

Q.24 Write short notes on trigger and give SQL query example.

Q.25 Define following logical connectivity with example: AND, OR and NOT.

Q.26 What are the various aggregative operators (functions) in SQL? Explain in brief.

Q.27 How is the cursor helpful in retrieving data from database? Explain the different types of cursor with attributes.

Q.28 What are the views? Explain the operations that can be performed on views.

Q.29 Specify the following queries in SQL on given database schema given:

Employee (Empno, Ename, Bdate, SSN, address, designation, salary, deptno, joindate)

Department (Deptno, Dname, Dlocation)

Project (Pno, Pname, Deptno, Plocation)

Works_on (SSN, Pno, hours)

- (i) Retrieve the name and address of all employees who work for research department.
- (ii) Retrieve all employees in department 5 whose salary is between 30,000 and 40,000.
- (iii) Retrieve list of employees and the projects they are working on, order by department and within each department ordered alphabetically by employee.
- (iv) Retrieve the resulting salaries of every employee working on the ERP project is given 20% raise in salary.

Q.30 Write SQL query for each of the following:

- (i) Create table named as Std-Rec with the columns – Rollno, Name, ContactNo, Dept.
- (ii) Add one more column (Address) to table Std-Rec.
- (iii) Add primary key constraint to table Std-Rec.
- (iv) Insert the following records into the table:

101	Shankar	1234567	Religion	Madurai
102	Vivek	8910111	Mythology	Kolkata
103	Arvind	2131415	Science	Kolkata

Q.31