

Q.No	Part A (5 x 2 = 10 marks) (Answer all the questions)
1	Analyze about relational algebra.
2	Explore the significance of the AVG() and MAX() function in SQL.
3	Define the steps involved in creating a stored procedure in a database. How is the CREATE PROCEDURE statement utilized?
4	What is the objective of first normal form?
5	Differentiate between Lossy and Non-lossy Decomposition

Q.No	Part B - (2 x 16 = 32 marks), (1 x 8 = 8 marks) (Answer all the questions)
11 A	Define and explain the purpose of joins in a relational database. Discuss how joins facilitate the retrieval of data from multiple tables and provide examples illustrating different join scenarios.
OR	
11 B	Define and explain the concept of subqueries in SQL. How do subqueries enhance the capabilities of SQL queries? Provide examples to illustrate their use in retrieving and manipulating data.
12 A	i) Explain multi-valued dependency and the fourth normal form with illustrations. ii) Discuss the various types of functional dependency with illustrations.
OR	

Design a database schema for a university course registration system. The system has information about students, courses, instructors, and registrations.

Students (StudentID, FirstName, LastName, Birthdate, Address)

Courses (CourseID, CourseName, Credits, InstructorID)

12 B Instructors (InstructorID, FirstName, LastName, Department)

Registrations (RegistrationID, StudentID, CourseID, RegistrationDate)

Normalize this schema up to Boyce-Codd Normal Form (BCNF) and discuss the advantages of reaching higher normal forms. Identify functional dependencies, candidate keys, and foreign keys as part of the normalization process

13 A Explain the tuple relational calculus with example,