Bachelor level/ B. Sc. (CSIT)/ 4th Semester
Time: 3 hours
Subject: Database Management System (COM442)

Full Marks: 60
Pass Marks: 30

Candidates are required to give their answers in their own words as far as practicable. Figures in the margins indicate marks.

Group A

Very short answer questions (attempt *all*). [8x2 = 16]

1. Define transaction recovery.
2. What is composite attribute?
3. Write a SQL syntax of table creation with primary key.
4. Define relational algebra.
5. Explain Cartesian product.
6. Explain distributed processing.
7. What is statistical database?
8. Explain user – defined integrity.

Group B

Short answer questions (attempt *any five*). [5x4 = 20]

9. What is DBMS? Explain the application of DBMS.
10. Define a Relational Calculus and explain its types.
11. Write short note;
    a) Super Key
    b) Candidate Key.
12. Why Data Integrity is required in database? Explain the Referential integrity and domain integrity.
13. Why Database Security is required? Explain the aspect of database security.
14. Explain access control mechanism in database.

Group C

Long answer questions (attempt *any three*). [1x8 = 8]

15. Why Normalization is need in database? Explain 1st, 2nd, and 3rd normalization with its examples.
16. What is mysql? Consider the following Company database where primary keys are underlined. (write a SQL queries)
    Employee (EmployeeID, EmployeeName, Address, Age, Salary, DepiD).
    Department (DepID, DepName, Location).
    a) Find the names of all employees who work in the IT department.
    b) Find the names of all employees whose salary is between 50000 and 60000.
    c) Find the names of all female employees who work in the Finance department.
17. What is ER model? Draw ER- Diagram of College management system and explain.
18. Explain the transaction properties and elaborate the two-phase locking techniques.

The End