

B.Tech. (Sem. - 5th)

DATABASE MANAGEMENT SYSTEM

SUBJECT CODE : CS - 305

Paper ID : [A0466]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is Compulsory.**
- 2) Attempt any Four questions from Section - B.**
- 3) Attempt any Two questions from Section - C.**

Section - A

(10 × 2 = 20)

- a) What is difference between a database and a table?**
- b) What is referential integrity?**
- c) Define primary key and candidate key.**
- d) Discuss the various types of transaction failures that may occur in a system.**
- e) What are log records?**
- f) Define the term data manipulation language.**
- g) What do you mean by deadlock.**
- h) What is many to many relationship? Give example.**
- i) Explain the purpose of database security.**
- j) What are advantages of DBMS?**

Section - B

(4 × 5 = 20)

- Q2)** Explain how does granularity of locking affect the performance of Concurrency control algorithm.
- Q3)** Explain how the “GROUP BY” clause works. What is the difference between the WHERE and HAVING clauses? Explain them with the help of an example for each.
- Q4)** Discuss the architecture of DBMS.
- Q5)** What do you mean by transaction? List different desirable properties of transactions?
- Q6)** What is a view? Explain the views in SQL?

Section - C

(2 × 10 = 20)

Q7) Write short notes on:

- (a) Data independence.
- (b) ER Diagram.
- (c) Grant/Revoke Privileges.
- (d) Constraints.

Q8) What is normalization? Explain types of normalization with suitable example.

Q9) (a) What is Relational Algebra and explain its basic operations.

(b) Consider the following relational database schema

Employee (empcode, ename, eaddress, esalary)

Department (deptcode, dname, dlocation)

Project (projcode, projname, projduration)

Worksfor (empcode, deptcode, projcode, duration)

Perform following queries using SQL and relational algebra:

- (i) Find the name of the employees whose salary is more than 50,000,
- (ii) Find details of departments located in Delhi.
- (iii) Find names of employees working on project with projectcode='130021'

