

Database Management System**Sub. Code-CPE-206****SEM-III****Time Allowed: 03 Hours****Maximum Marks: 50****Note:-Section C is compulsory. Attempt any six questions by selecting three questions from section A & B.****SECTION – A**

Q1. What is the difference between logical data independence and physical data independence? Which one is harder to achieve? Why?

Q2. Explain the concept of data abstraction in three level architecture of database.

Q3. What four main types of actions involve in databases? Briefly discuss each.

Q4. Explain the concept of Relational Algebra.

Q5. **For the following relation schema:**

employee(employee-name, street, city)

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

company(company-name, city)

manages(employee-name, manager-name)

Write an expression in SQL for each of following of Queries:

- 1) Find the names, street address, and cities of residence for all employees who work for 'World Bank Corporation' and earn more than \$51,000.
- 2) Find the names of all employees in the database who live in the same cities as the companies for which they work.
- 3) Find the names of all employees in the database who live in the same cities and on the same streets as do their managers.
- 4) Find the names of all employees in the database who do not work for 'World Bank Corporation'. Assume that all people work for exactly one company.
- 5) Find the names of all employees in the database who earn more than every employee of 'India Bank Corporation'. Assume that all people work for at most one company.

SECTION – B

- Q6. What is Domain constraint? Specify it in SQL.
- Q7. Discuss heuristic approach for query optimization.
- Q8. What undesirable dependencies are avoidable when a relation is in 2NF? Explain with example.
- Q9. What is Outer Join? Explain with Example.
- Q10. What is the role of Subqueries? Describe with the help of Example

3X5

SECTION – C

Q11. Write briefly

- a) Why do we designate one of the candidate keys of a relation to be the primary key?
- b) Define strong entity.
- c) List down applications of 3-tier architecture of database?
- d) Define 3NF.
- e) What do you mean by closures of functional dependency?
- f) What is cardinality of a relation?
- g) List down the advantages of database approach?
- h) Define normalization.
- i) Define Physical level of database architecture.
- j) What is self join?

10X2=20

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