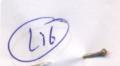
SP-7805



Database

Memagement System
(3 Hours)

[Total Marks:100

N.B.: (1)	Question	No.	1 is	compulsory.
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- (2) Attempt any four questions out of remaining six questions.
- 1. (a) Define following terms with example :—

 (i) Single and composite attributes

 (ii) Single valued and multivalued attributes

 (iii) Entity Set

 (iv) Relationship Set

 (v) Aggregation.
 - (b) What do you mean by Database Management System? Why would you choose a databse system instead of simply storing the data in operating system files?
- 2. (a) For the given database, write SQL queries :—
 employee (eid, employee_name, street, city)
 Works (eid, cid, salary)
 Company (cid, company_name, city)
 Manager (eid, manager_name)

 (i) Find the names_street and city of all of the names_street.
 - (i) Find the names, street and city of all employees who work for "ABC" 4 and earn more than Rs. 20,000.
 - (ii) Find the names of all employees having "i" as the second letter in their names.
 - (iii) Display the annual salary of all employees.
 (b) Discuss the different security and authorization mechanisms in database management system.
- 3. (a) For the following problem draw an E-R diagram:

 "ABC Company" is a software company, that has several employees working on different types of projects, on different platforms. Projects have different schedules and may be in one of several phases. Each project has a project leader and team member at different levels.
 - (b) List the ACID properties. Explain the usefulness of each.
- 4. (a) Explain type of constraints with an example.
- (b) Explain 1NF, 2NF and 3NF with suitable example.
- 5. (a) What is Recoverable Schedule? Why recoverability of schedule is desirable? 10

 Are there any circumstances under which it would be desirable to allow non-recoverable schedule? Explain.
 - (b) Expain the insertion of entry in a B⁺ tree.
- 6. (a) Compare shadow page recovery scheme with log based recovery scheme. 10
 - (b) Explain following relational algebra operations:-
 - (i) Generalized Projection
 - (ii) Set Difference
 - (iii) Assignment(iv) Aggregate.