03:00 pm - 06:00 pm

Database Management System   **Q.P. Code: 24224**

(3 Hours)   **[Total Marks 80]**

i.   **Q. 1. is Compulsory.**
ii.   **Attempt any three from the remaining.**
iii.   **Assume suitable data.**

Q 1

a   Explain Data Independence   **5**
b   Explain Recursive queries and Nested queries   **5**
c   What are different Keys in ER diagram?   **5**
d   Explain Join Operations in relational algebra   **5**

Q 2

a   Explain different indexing types in database management system   **10**
b   Explain need of Normalisation along with all the normal forms   **10**

Q 3

a   Consider the following employee database.   **10**
   - **Employee(empname, street, city, date_of_joining)**
   - **Works(empname, company_name, salary)**
   - **Company(company_name, city)**
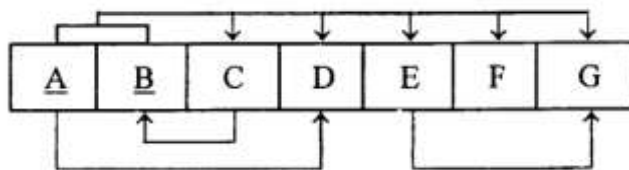   - **Manages(empname, manager_name)**

Write SQL queries for the following statements:
1. Modify the database so that employee "Amruta" now leaves in "Konkan"
2. Find number of employees in each city with date_of_joining as "01-Aug-2017"
3. list name of companies starting with letter "A"
4. Display empname , manager_name , street , city only for employees having manager

b   Explain in detail different database users   **10**

Q 4   a   Construct a dependency diagram of relation R and normalize it up to the BCNF Normal form   **10**

b   Explain different types of operators in relational algebra   **10**

Q 5

a   Explain the difference between stored procedure and functions in SQL   **10**
b   Draw EER diagram for Library Management System showing aggregation.   **10**

Q 6   **Write a short note on:**

a   Specialization and Generalization   **5**
b   DCL commands   **5**
c   Cursors and its types   **5**
d   Hashing techniques   **5**