QUESTION BANK

CS502 – Database Management Systems

Unit - I

Q1. Explain about database system architecture in detail.

Q2. What are the functions of DBA?

Q3. Define the concept of aggregation, specialization and generalization. Give examples of where these concepts are useful.

Q4. How the data based approach is different from file based approach.

Q5. Explain three level schema architecture of DBMS. Explain how does it leads to data independence.

Q6. Construct an E-R diagram for hospital with a set of patients and a set of doctors. Associate with each patient a log of the various tests and examination conducted. Also show tables for various entities with attributes.

Q7. Draw an E-R diagram of university by determining entities of interest and the relationships that exist between these entities. Also transform it into a table.

Q8. Draw an ER diagram for a small marketing company database. Assume suitable data.

Q9. Why the hierarchical data model is considered inflexible?

Q10. Explain the following terms:

i) Data and information
ii) Strong and weak entity set
iii) Attribute
iv) Types of attribute
v) Physical and logical data independence
vi) Total and partial participation
vii) Instances

Unit–II

Q1. What are the characteristics of a relation? Also explain domain, tuple, degree, attribute, cardinality.

Q2. Explain select, project, cartesian product, join, division, union, intersection with suitable examples.

Q3. Explain integrity constrains with example.

Q4. Write the commands of DDL, DML, DCL and TCL.

Q5. What are the aggregate functions of SQL?

Q6. Write SQL Trigger for library where books does not issue on weekend (Saturday and Sunday)

Q7. Differentiate between Relational calculus and Relational algebra.

Q8. Consider the employee data. Give an expression in **SQL** and **Relational algebra** for the following query:

Employee (employee-name, street, city)
Works (employee-name, company-name, salary)
Company (company-name, city)
Manages (employee-name, manager-name)

i) Find the name of all employees who work for State Bank.
ii) Find the names and cities of residence of all employees who work for HDFC Bank.
iii) Find all employees who do not work for State Bank and ICICI Bank.
iv) Find all employees who belong to same city where they are working.
v) Find the employee name and his salary whose manager is Ravi.

Q9. We have the following relations:

Emp (empno, ename, jobtitle, managerno, hiredte, sal, comm, deptno)
Dept (deptno, dname, loc)
Answer the following:

i) Write SQL and relational algebra query to find the employees working in the department 10, 20, 30.
ii) Write SQL query to find employees whose names starts with letter A or a.
iii) Write SQL query to find the employee and his department name.
iv) Find the employees who are working in Smith's department.
v) Find the employees who get more than Allen's salary.
vi) Find the employees whose manager is KING.
vii) Display the employees who are getting maximum salary in each department.

Q10. Explain following:

i) Keys
ii) Primary, composite, candidate and super key
iii) Theta Join
iv) Outer Join
v) Intension and Extension