Syllabus For DBMS and Questions Jan -Apr 2025

SE SEM IV DIV C1 C2 C3

1 Introduction Database Concepts

1.1 Introduction, Characteristics of databases, File system v/s Database system, Data abstraction and data Independence, DBMS system architecture, Database Administrator

2.Entity–Relationship Data Model

2.1 The Entity-Relationship (ER) Model: Entity types: Weak and strong entity sets, Entity sets, Types of Attributes, Keys, Relationship constraints: Cardinality and Participation, Extended Entity-Relationship (EER) Model: Generalization, Specialization and Aggregation

3.Relational Model and relational Algebra

3.1 Introduction to the Relational Model, relational schema and concept of keys. Mapping the ER and EER Model to the Relational Model, Relational Algebra-operators, Relational Algebra Queries.

Questions

Q1. Compare file system with database system

Q2. Explain DBMS system architecture

Q3. Explain types of users of the database system. Explain the role of DBA.

Q.4. Explain EER features with examples.

Q.5. Construct ER Diagram on specified case study and convert to relational model.

Q.6. List steps required to ER & EER model to map relational model. (All Rules for ER And EER with example)

Q 7. For given ER and EER model map to relational model

Link for reference :- sample ER/EER to Relational Mapping example

1. https://medium.com/@kumarjai2466/er-to-relational-mapping-ac84b3c9f258
2. https://medium.com/@kumarjai2466/er-to-relational-mapping-ac84b3c9f258
3. https://www2.cs.science.cmu.ac.th/courses/204320/lib/exe/fetch.php?media=ch09_erandeertorelationalmapping.pdf

Q.8. Explain components of ER with diagrams.

Q.9. List & explain different types of attributes in ER diagram with examples.

Q.10. Explain relationship, relationship set and relationship cardinality.

Q.11. Explain the concept of keys with examples.

Q.12. Explain following with **examples**

1.Weak Entity Set

2.Total and Partial Participation

3.Generalization/ Specialization

4.Ternary Relationship

5.Roles in ER diagram

Relational Algebra-operators, Relational Algebra Queries Questions

Q 13. Explain following relational algebra operator **with example**

1. **select**
2. **project**
3. **union**
4. **set difference and Intersection**
5. **Cartesian product**
6. **rename**

Q 14. Queries on relation algebra based on operator in Q13