Dronacharya College of Engineering, Gurgaon

Department of Electronics and Computers Engineering

Subject: Database Management System **(CSE-202-F)** **Semester: IV/ Branch:** ECS

Important Questions

Section A

1. With a neat diagram, explain the structure of a DBMS?
2. Draw an E-R diagram for a small marketing company database, assuming your own data requirements
3. Compare the features of file system with database system.
4. Explain the architecture of DBMS
5. Compare File systems with database systems.
6. Explain all types of data models
7. Explain E-R Model concept and extended E-R model.
8. Explain the different types of keys used in DBMS discuss about database users and administrator.

Section B

1. What is meant by Relational calculus? Query examples for tuple and domain relational calculus?
2. What is data integrity? Explain the types of integrity constraints.
3. What are the relational algebra operations supported in SQL?
4. Define class Hierarchies and Aggregation?
5. Explain static and dynamic Hashing Techniques?
6. Briefly describe about B+ tree index file structure.
7. Explain structure of file indices
8. Discuss the fundamental operations in relational algebra operations with suitable example.

Section C

1. With relevant examples discuss the following in SQL
    a. DDL
    b. DML
    c. DCL
    d. Views.
2. Explain various DML commands with neat syntax
3. Explain 1NF, 2Nf and BCNF with suitable example
4. What are the pitfalls in relational database design? With a suitable example, explain the role of functional dependency in the process of normalization.
5. Define BCNF .How does it differ from 3NF
6. What is normalization? Explain first, second and third normal forms with an example describing the advantages of normalization.
7. Explain briefly about Armstrong rules on functional dependency and write the algorithm to compute functional dependency closure.

Section D

1. Draw a neat sketch to indicate the architecture of a distributed database system. With an example explain the various form of data fragmentation used in DDB.
2. Explain about immediate update and deferred update recovery techniques.
3. Explain the concepts of serializability.
4. How Transactions are possible in Distributed database? Explain briefly
5. What is Transaction state and its ACID properties?
6. Discuss about two phase locking and commit protocol
7. Explain various recovery techniques during transaction in detail.
8. How can we achieve concurrency control achieved in DBMS through Serializability?
9. Explain Recovery schemas in detail.