

Answer to the Question No-1

The theoretical lecture on 'Basic Concepts' focuses on core principles of databases, ~~and the relevance of~~ The role of Database Management Systems (DBMS) in addressing challenges like data redundancy, isolation, security concerns in traditional file systems. It introduces data abstraction levels (Physical, logical and view) to simplify user interaction, along with schemas and instances in database design. Key data Models, such as relational and entity-relationship (E-R) are outlined, as well as database languages like Data Manipulation Language (DML) and Data Definition Language (DDL). The lecture emphasizes storage management, detailing the roles of the storage manager, file manager and buffer manager in ensuring efficient data access and consistency. It categorizes database administrators (DBAs), such as defining schemas, ensuring data integrity and optimizing performance. This comprehensive overview highlights DBMS as essential for managing data efficiently.

Answer to the ques-02

The lecture on 'Entity-Relationship Model (Part-02)' builds on previous concepts, exploring advanced topics in E-R diagrams. It introduces notations for representing total and partial participations in relationships, along with cardinality constraints. Key concepts such as superkeys, candidate keys, and primary keys are explained as essential for uniquely identifying entities, while foreign keys are discussed as tools for linking entities. Weak entity sets, which lack primary keys, are covered in detail, emphasizing their dependence on the identifying entities and discriminators for uniqueness. The lecture also examines generalization (a bottom-up approach) and specialization (a top-down approach), showing how entities can be combined or broken down to form hierarchies. Aggregation, where relationships are treated as entities, is introduced for more complex scenarios. The session concludes with a hands-on

Exercise involving a University Management System, applying concepts like generalization, specialization and weak entity sets to create a ~~pen~~ practical E-R Diagram.

————— 0 —————