Chapter 1

Types and advantage/disadvantages of databases
File systems vs. DB systems
Data Anomalies
DBMS functions

Chapter 2

Data modeling (OO, ER)
ER Model (what it is and how to use it) Advantages/disadvantages
Conceptual Data Model

Chapter 3

RDBMS (Logical View, Characteristics, Types of Keys, Integrity )
Dependencies
Relational Algebra (Product, select, join,…….)
Types of relationships

Chapter 4 and 5

Entity Relationship Model (components: Entities, Attributes, and Relationships)
Chen Model
Be able to draw an ERM based on given requirements
Advanced Data Modeling (Know how to use them)

Chapter 6

Normalization of DB tables (Know what are the rules , why it is necessary to apply them, and be able to apply them to tables)
Types of dependencies

Chapters 7 and 8

SQL queries ( be able to write queries based on the given requirements)