Chapters and Topics you must read and understand for midterm and will also be included in preparing for final exam.

Chapter 1 all topics pages 3-28

Chapter 2 all topics pages 31-55. You must know DBMS component modules on page 43, database system utilities on page 45, classification of database management systems in section 2.6. Section 2.5 is too general but hard to make any questions but please read to learn about various architectures and how DBMS, OS, and hardware and communication are layered.

Chapter3 pages 59-68. main phases of database design, different types of attributes for an entity. You do not need to worry about ER diagram and on page 64.

Chapter 5 all topics pages 149-170

Chapter 6 all topics pages 177-201, how to covert English to SQL query and vice versa

Chapter 7 all topics pages 207-221. There exist and for all semantics. Aggregate functions and grouping. Queries in exam will not be very complicated but a good understanding of SQL features is needed.

Chapter8 all topics about relational algebra on pages 239-259, query trees and optimization by rearranging operators (move join at higher level in tree to do them at the end). Outer joins, left outer join, right outer join.  Some familiarity with relational calculus in section 8.6.1, page 269. Converting a relational algebra to SQL or relational calculus as section 8.6.4 ( briefly). Safe expression 8.6.8 on page 276. What is domain calculus and its advantages. (Relational calculus is formalization of SQL and is not covered in depth for midterm)

Chapter 16 all topics pages 541-588. Disk storage and parameters ( also see appendix B on page 1167-1169, buffer management and replacement, fixed length, variable length records, hashing on pages 572-581, Parallel disks RAID ( briefly), questions such as 16.34-16.37 and in assignment

Chapter 17 various types of indexes, example 1 and 2 on page 605-606, multi-level indexes in section 17.2 on page 613, example 4 on page 614, general knowledge of B-Trees and B+ Trees, partitioned hashing and grid files ( pages 632-633) and bitmap indexes on page 634-635, tuning indexes page 640, section 17.7 physical database design and factors that influence it on page 643-646 ( easy to read but very useful)

Chapter 14 pages 459-461, informal design guidelines section 14.1 on page 461, insertion, deletion, modification anomalies, section 14.1.5 and functional dependencies and eventually normalization ( first, second third normal form of relations). Plan to cover them soon up to page 487 (Not in midterm since we just started learning this topic)