**Final Topics**

**Highlighted chapters below are relatively more important in terms of Final.**

**Final will cover Chapters 6, 10, 11, 12, and 13. (Chapter 7 SQL, Chapter 8 PL/SQL and Chapter 9 NoSQL are not included.) For more details, see below.**

**Chapter 6:** **Relational algebra**

* Covered: You should be able to write relational algebra queries if English descriptions are given. For example, write a relational algebra query to find all students who live in Vestal and their GPA is higher than 3.4. (This is just a simple example; you may be asked to write more sophisticated queries.)
* Not covered: Proofs regarding how to implement relational algebra query operators using the six basic operators.

**Chapter 10: Indexing**

* Covered: storage hierarchy, I/O cost (sequential I/O and random I/O), B+ tree, indexing via hashing, primary index, secondary index, guidelines for index creation
* Not covered: index creation in Oracle

**Chapter 11: Query Optimization**

* Covered: selectivity factor, selection processing, join processing (nested loop, sort-merge, hash join), query-tree based optimization (heuristic rules), cost-estimation based optimization
* Not covered: projection processing

Chapter 12. Recovery

* ACID properties
* Immediate vs deferred model
* Checkpointing

**Chapter 13: Concurrency Control**

* Covered: valid schedule, serial schedule, equivalent schedule, serializable schedule, Algorithm TSS, 2PL, R2PL, S2PL, Wait-Die Rule, Wound-Wait Rule, deadlock prevention, resource ordering
* Not covered: deadlock detection and resolution