Study guide for CS165 second midterm exam

By now, you should be able to interpret or write a Java program that uses any of the items shown below.

1) Review Topics
   a. Basic Programming
   b. Classes versus Objects
   c. Object Instantiation
   d. Abstract Classes and Interfaces
   e. Recursion
   f. Inheritance
   g. Polymorphism
   h. Dynamic binding

2) Data Structures
   a. Collections hierarchy
   b. Collection interface
   c. List interface
   d. Queue interface
   e. Stack interface
   f. ArrayList class
   g. LinkedList class
   h. Stack class
   i. Collections class
   j. Comparable interface
   k. Comparator interface
   l. Iterators
   m. ArrayList implementation
   n. LinkedList implementation

3) Priority Queues, Heaps
   a. Offer/add
   b. Complete binary tree
   c. Array storage
   d. maxHeap, minHeap
   e. Insert/delete
   f. HeapSort

4) Grammars, Expressions, Parsing
   a. Grammars / Production Rules
   b. Regular Expressions
   c. Infix, Prefix, Postfix
   d. Expression Trees
   e. Expression Evaluation

5) Trees
   a. Binary Trees
   b. Binary Search Trees (BST)
      ✓ Searching
      ✓ Inserting / Delete
      ✓ Inorder, Preorder, Postorder, LevelOrder Traversal
   c. B+ Trees
      ✓ Advantages and Disadvantages
      ✓ Structure
      ✓ Insert / Delete
      ✓ Rotation
      ✓ Bulk loading