Midterm Format & Topics

Format: Un-Proctored

The midterm exam will consist of T/F, multiple-choice (similar to the quizzes), short answer and written questions.

The time limit is 75 minutes and you will have 1 opportunity. The exam will unlock on May 1st and be due by May 3rd.

You are allowed to use the following materials:

- Scratch Paper
- One sheet, 8.5x11", double-sided notes (typed or handwritten)
- Students may use any calculator
- Windows Calculator (and MacOS equivalent) "Programmer Mode" is OK!

The Topics you will see on the Midterm include:

- Insertion Sort, Merge Sort, & Binary Search
- Bounding and comparing complexities
- Big O, Big Omega, Big Theta

- Write an algorithm using divide and conquer techniques.
- Given an algorithm write a recurrence relation.

- Solve a recurrence with your choice of technique

- Dynamic Programming
  - Be familiar with the following DP algorithms, run-time and general structure.
  - LCS
  - Knapsack
  - Rod cutting
  - Fibonacci
  - The basic structure of a DP algorithm
  - Given a problem explain how DP can be used t solve it.
- Greedy Algorithms
  - Knapsack
  - Coin Change
  - Huffman codes
  - Scheduling