

600.363 (Intro Algos)-463(Algos I)

Topics Topics for the Final Examination

1. The examination is a cumulative examination. That is, the topics covered before the second examination are included for the second examination. All the topics are listed below.
 2. Speed of Algorithms
 3. Correctness of Algorithms
 4. Order of notation
 5. Divide and Conquer technique
 6. Sorting
 7. Order Statistics
 8. Dynamic Programming
 9. Elementary Data Structures
 10. Dictionary Operations
 11. AVL trees, 2,3 trees, 2-4 trees, Red-Black trees (not in depth)
 12. 2,3,4-trees
 13. Red-Black trees
 14. Priority queues
 15. Union-Find
 16. Topological sorting
 17. Minimum spanning trees
 18. Strongly connected components
 19. Single Source shortest paths
 20. All-Pairs shortest paths
 21. Maximum Flow
 22. Linear Programming (very elementary introduction)
 23. NP-completeness
1. Specific sections and subsections are listed below:
 2. Section 1
 3. Section 2

4. Sub-section 3.1 (o and ω not covered)
5. Sub-sections 4.2,4.3, 4.5
6. Section 6
7. Sub-section 8.1
8. Sub-section 9.3
9. Sub-section 8.3
10. Sub-sections 15.4,15.2
11. Section 10
12. Subsections 12.1, 12.2, 12.3
13. 2,3,4 tree version of subsections 18.1, 18.2, 18.3
14. Subsections 13.1,13.2, 13.3, 13.4
15. Subsection 6.5 (only Inserts and Extract mins)
16. Section 21 (only $n \log^* n$ version)
17. Subsections 22.1, 22.3, 22.4, 22.5, 23.1, 23.2
18. Subsection 24.3
19. Subsections 25.1, 25.2
20. Subsections 26.1, 26.2, 26.3
21. Subsections 29.2
22. Subsections 34.1, 34.2, 34.3, 34.5