

CS 3100 – Algorithms

Assignment 2
Kishore Kothapalli

Due: 13-DEC-2007 in class.

Problem 6. Write the recurrence relations for the selection algorithm when the input is divided into groups of 3 and groups of 11. In which of the above two cases does the algorithm run in linear time? Justify your answer. **(5 Points)**

Problem 7. Given two sorted arrays A and B each containing n elements design an algorithm to find the median of all $2n$ elements in A and B . Argue that your algorithm is correct. **(5 Points)**

Problem 8. Correctness of Hoare partition algorithm. Read the algorithm given by Hoare to partition a set of elements around a pivot (See the book Problem 7-1 on page 159). Answer the parts (a) through (d) in problem 7-1. **(10 Points)**