

CS493-02 Cluster Computing
Test 3
2 pm - 2:50 pm, Monday November 24th, 2003

Name:

Part I is closed book. Do not refer to any materials for this part. Return Part I to get Part II.

Total /30

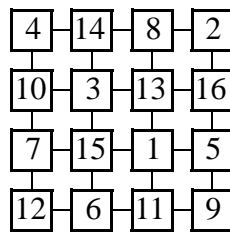
Part I

Do not refer to any materials for this part

Qu. 1 Answer each of the following briefly:

(a) Show the steps to sort the following numbers using Shearsort:

4



(b) Show the steps in merging two sorted lists:

2 4 5 8

1 3 6 7

into one sorted list using Batcher's Odd-Even merging algorithm (as used in his Odd-Even Mergesort).

4

(c) What is a Bitonic sequence?

4

(d) Write the sequential code to sort n numbers using the Rank Sort algorithm. Show how this algorithm can be parallelized to its fullest extent using the `forall` notation. (It is not necessary to handle duplicate numbers.)

4

CS493-02 Cluster Computing
Test 3
2 pm - 2:50 pm, Monday November 24th, 2003

Part II

Name:

You may refer to any materials for this part (but not others in the class).

Qu. 2 Write a complete MPI program to sort a list of eight integers with the *odd-even transposition sort* algorithm. Use four processes.

Provide comments in your code to help the grader! If I do not understand the code, I will assume it is incorrect.