

## SAMPLE QUESTIONS FOR FINAL EXAM

CS 340-2

May 4, 2010

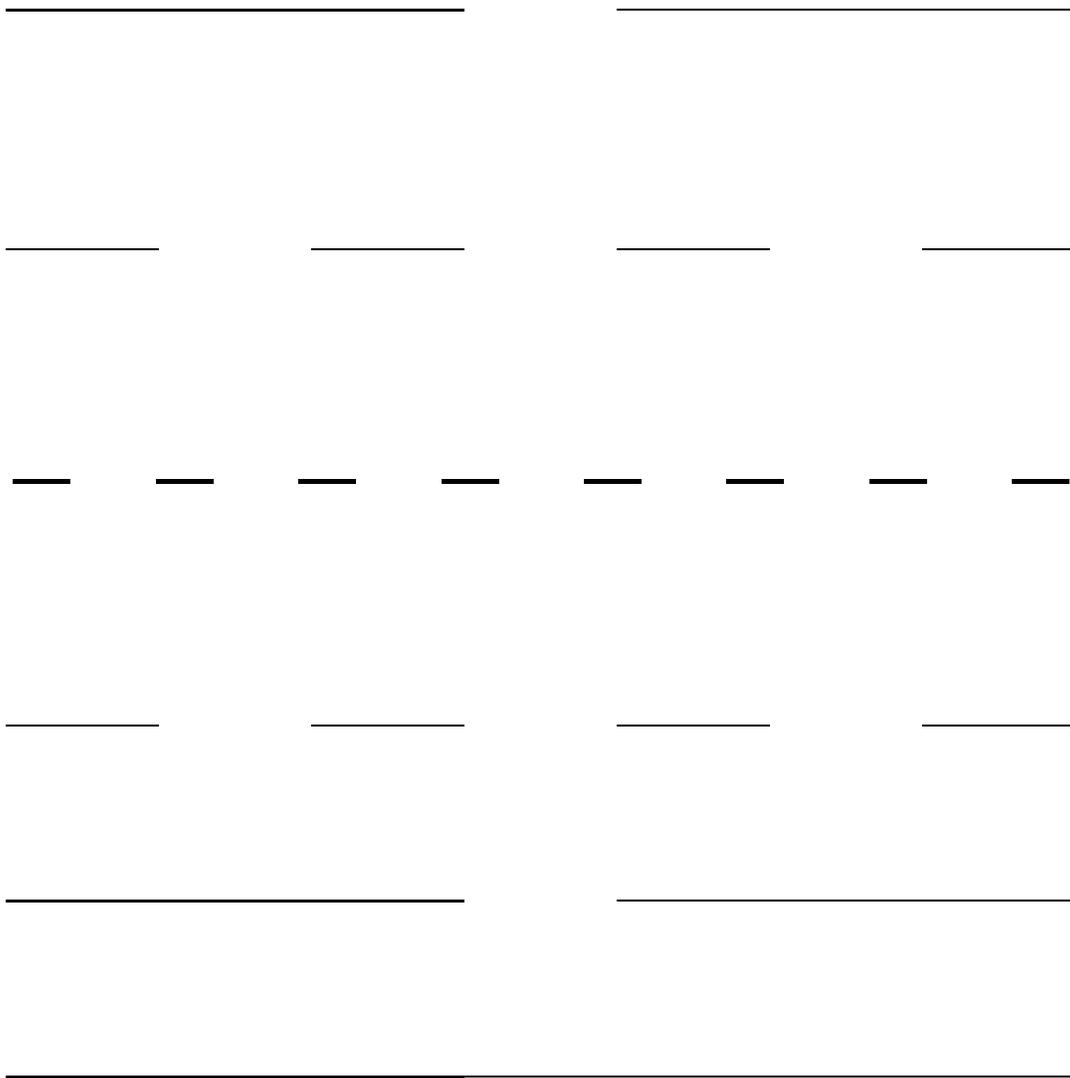
The purpose of this sheet is to show you some sample questions so you can familiarize yourself with the form of some of the questions that will be on the exam.

1. The first column of the table below shows a list of numbers to be sorted with Shell sort using increments of 5, 3, 1. In columns 5a–5e, show the result after each sublist with an increment of 5 has been sorted. Then, in column 3a, show the result after the first sublist with an increment of 3 has been sorted. You only need to show the items that have changed in each column. You do not need to show the rest of the passes.

Original	5a	5b	5c	5d	5e	3a
85						
17						
19						
65						
97						
54						
23						
12						
32						
15						
29						
43						
65						
27						

2. The first row of this chart shows a list of numbers to be sorted using mergesort. Show the split into sublists, then show the merge steps. When there are an odd number of elements in a list, make the left sublist larger. Put an 'X' on any sublist you don't use.

65      17      19      85      97      12      23



3. The first row of this chart shows a list of numbers to be sorted using quicksort. Use the first number of each sublist as the pivot. In the second row of the chart, enter the pivot in the circle. Then enter the numbers in the left and right sublists to the left and right of the pivot, respectively. (Note that the two sublists need not be the same size.) Repeat this process on every line. If a sublist is empty, just draw an X on it. (Also copy the pivot to the tilted circle on the line below so that your final line will show all the entries in sequence.)

