

CSSE 220 – Object-Oriented Software Development
Rose-Hulman Institute of Technology

Quiz Practice

Name (Print): _____ Section: _____

1. **Selection Sort (trace & concept)**

Given the array [7, 3, 5]:

- (a) Show the array *after each outer-loop iteration* of Selection Sort.
- (b) Clearly show the boundary between sorted and unsorted parts at each iteration.
- (c) What is the worst-case time complexity (Big-O) of Selection Sort?

2. **Insertion Sort (trace & best/worst)**

Given the array [4, 1, 3]:

- (a) Show the array *after each outer-loop iteration* of Selection Sort.
- (b) Clearly show the boundary between sorted and unsorted parts at each iteration.
- (c) State the best-case and worst-case time complexities (Big-O) for Insertion Sort.

3. Merge Sort (splits, merges, and cost)

Consider running Merge Sort on $[8, 4, 2, 6]$.

- (a) Draw the split structure down to single-element arrays.
- (b) After the split, list the pairs merged at each level.
- (c) Give the worst-case time complexity for Merge Sort.

