Test 2: CS 5381 Analysis of Algorithms

1:00 - 1:50 PM on 11/09/2022
Max. 100 points

Name: **R#:** **Signature:**

You may extend your solutions to the other side of this paper.

1. (50 points) Consider a modification of the rod-cutting problem in which, in addition to a price p_i for each rod, each cut incurs a fixed cost of c. The revenue associated with a solution is now the sum of the prices of the pieces minus the costs of making the cuts. Provide a pseudocode of a dynamic-programming algorithm to solve this modified problem.

2. (50 points) Give an example to show that the approach of selecting the activity of least duration from among those that are compatible with previously selected activities does not produce a maximum-size set of mutually compatible activities.