Assignment 2

Wen Dong #110057395

COMP 8700 Fall 2019 Assignment 2

Due: Nov. 25@ Bb, 11:59pm

4.1 (a) (c) (d) (e)

**4.1** Give the name of the algorithm that results from each of the following special cases:

**a**. Local beam search with k = 1.

**~~b~~**~~. Local beam search with one initial state and no limit on the number of states retained.~~

**c**. Simulated annealing with T = 0 at all times (and omitting the termination test).

**d**. Simulated annealing with T = ∞at all times.

**e**. Genetic algorithm with population size N = 1.

4.4 no simulated annealing.

**4.4** Generate a large number of 8-puzzle and 8-queens instances and solve them (where possible)

by hill climbing (steepest-ascent and first-choice variants), hill climbing with random

restart, and simulated annealing. Measure the search cost and percentage of solved problems

and graph these against the optimal solution cost. Comment on your results.

4. 10

**4.10** Consider the sensorless version of the erratic vacuum world. Draw the belief-state

space reachable from the initial belief state {1, 2, 3, 4, 5, 6, 7, 8}, and explain why the problem

is unsolvable.