

The rules of the exam are as follows:

- When asked for a runtime in big-O notation, give the tightest and simplest possible bound you can. If your algorithm is  $O(n)$  and also  $O(n^2)$ , just say it is  $O(n)$ . If it is  $O(2n)$ , it is also  $O(n)$ , so omit the factor of 2. And so on.
- Please be sure to write your name at the top of the page. You may wish to do so on the top of each page just in case.
- You should read all the problems as soon as possible; problems are not necessarily in order of difficulty.
- Please solve ALL the problems. Keep your answers clear and concise.
- Please clearly mark all the answers to all your questions **and make sure that they are where they are expected to be**, and keep answers separated from scratch work. Scratch work will not be graded.
- Please write legibly. If we cannot read it, we cannot grade it.
- Absolutely no devices. If you need to use the bathroom during the exam, please leave it with the instructor.

Good luck! Have fun! You got this!!!

Points: 1) 30 points, 2) 30 points, 3) 40 points.

2c) treasure corrupt file

3a and 3b) add "this idea = \_\_\_\_" with the rewards for the algorithm on your example

DOOR					DOOR
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