

<b>Location: Foellinger Auditorium</b>
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Name	
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NetID	
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- (A) Please print your name and NetID. Anonymous submissions would not be graded.
- (B) There are five questions – you should answer all of them.
- (C) If you brought anything except your writing implements, your double-sided **handwritten** (in the original, by yourself)  $8\frac{1}{2}'' \times 11''$  cheat sheet, and your university ID, please put it away for the duration of the exam. Please turn off and put away *all* medically unnecessary electronic devices. If you are NOT using a cheat sheet, please indicate so. on this page.
- (D) Read all the questions beforehand. Ask for clarification if questions are unclear.
- (E) Describing an algorithm requires you to provide:
- (i) a detailed description of the algorithm,
  - (ii) a detailed explanation of why it is correct,
  - (iii) analysis of its running time, and
  - (iv) stating the overall running time explicitly.
- Failing to provide any of (i), (ii), (iii) or (iv) will result in a loss of points. Providing a pseudo-code is **recommended**. Pseudo-code without explanations is worth 0 points for the whole question.
- (F) For all questions asking for a description of an algorithm, you need to provide an algorithm that is **as fast as possible**. Correct and efficient algorithms that are suboptimal would get partial credit. Obvious correct suboptimal naive algorithms, that are still efficient, would get at most 25% of the points. Inefficient algorithms are worth no points. Deficient algorithms are to be avoided.
- (G) **This exam lasts 120 minutes.** The clock started when you got the questions.
- (H) If you run out of space, use the back of pages – please tell us where to look.
- (I) Give complete solutions, not examples. Declare all your variables. If you don't know the answer admit it and move to the next question. We will happily give 0 points for nonsense answers.
- (J) **Style counts.** Please use the backs of the pages or the blank pages at the end for scratch work, so that your actual answers are clear.
- (K) Please submit this booklet, your cheat sheet, and all scratch paper you used.
- (L) *Good luck!*
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