

COMP 5660/6660 Fall 2025 Assignment 1d Quiz Key

This is a closed-book, closed-notes, two-question multiple-choice quiz. You have exactly 5 minutes to complete it. Good luck!

1. Which of the following statements are true when writing the generational loop for a multi-objective evolutionary algorithm (MOEA)? Select all which are true.
 - (a) You need to re-evaluate the adults.
 - (b) **You need to evaluate the children.**
 - (c) You need to sort the children into child-only levels of nondomination before adding them to the population.
 - (d) **You need to sort the population into levels of nondomination after the children are added to the population.**
 - (e) **You need to sort the population into levels of nondomination after survival selection.**
2. Which one of the following statements best describes NSGA-II's use of crowding?
 - (a) Children can only replace the closest adult.
 - (b) It penalizes solutions based on how many other solutions are on the same level of nondomination.
 - (c) **It penalizes solutions based on how close their objective scores are to other solutions' objective scores.**
 - (d) It rewards solutions for dominating many other solutions.
 - (e) It penalizes solutions based on how many other solutions are within a specified radius of them in objective space.