Introduction to Evolutionary Computation (22753) and Evolutionary Computation (02411) — Exercise Question Set 3 (not assessed) —

[to be discussed in one of the tutorials]

1. Explain, and give the pros and cons of static, dynamic, and adaptive penalty functions.

2. Explain the meaning of the following concepts: generational gap, non-overlapping and overlapping populations.

3. Explain what is the difference between steady state and generational EAs.

4. Explain the meaning of the term search bias.

5. (i) What is the difference between Pareto-optimal solutions and Pareto-optimal front? (ii) Explain the meaning of dominated solution and non-dominated solution.

6. Comment on the weaknesses of the repair approach for constraint handling.

7. What is the difference between niching and speciation?