

# Evolutionary Computation

**Exam: January 30, 2012 (13:30-16:30)**

You are allowed to use a single sheet of paper with your own notes (A4, double-sided), and copies of the seminar papers. Write your name, student number and study program on the first page, and your name on any extra pages. DO NOT BE TOO BRIEF: ALWAYS CLARIFY YOUR ANSWER. If you prefer, you can write down your answers in Dutch.

1. How does standard proportionate selection works ? Explain why it is not a good selection mechanism.
2. Explain in detail how the gambler's ruin model is used to derive an analytical model for population sizing.
3. How is the linkage tree FOS-model build ? How does the GOMEA algorithm use this tree to generate new solutions ?
4. What is weighted aggregation for multi-objective problems ? What are its limitations ?
5. Explain how the Fiduccia-Mattheyses algorithm works for the graph-bipartitioning problem.
6. Explain how iterated local search (ILS) and its ES-NM extension for the QAP problem work.