
REVIEW FOR TEST 1

MARCH 02

1. Basics of Counting

- Counting strings. For example string over alphabet A, C, G, T of length 40 with (1) exactly 20 a 's, (2) at most 2 a 's, (3) at most 98 a 's, (4) two consecutive a 's.
- Basic recurrence relations.

2. Graph Theory

- Definition of a graph. Finding the number of edges of a graph.
- Sequencing by hybridization.

3. Probability Theory

- Basic probability using counting.
- The random string model.
- Conditional probability, independent events.
- The posterior probability and Bayes' formula.

4. Alignment

- The dynamic algorithm for finding an optimal global alignment of two strings (with linear gap penalty).
- Local alignment problem.
- The dynamic algorithm for finding an optimal local alignment of two strings (with linear gap penalty).
- Time complexity of the above algorithms.