Condensed Rosalind Python Exam Cheatsheet

DNA String Basics

- hamming(s,t) - Count differing symbols.
- reverse_complement(s) - Reverse + complement bases.
- gc_content(s) - Percent GC in DNA.
- transcribe(s) - Replace T with U.
- translate(rna) - Convert RNA codons to protein.

Probability & Counting

- fact(n) - Factorial.
- nCr(n,r) - Binomial coefficient.
- catalan(n) - Non-crossing perfect matchings.
- motzkin(n) - Non-crossing matchings with unpaired.
- count_subsets(n) - 2^n mod 1,000,000.

Dynamic Programming

- lcs(s,t) - Longest common subsequence.
- lis(seq) - Longest increasing subsequence.
- edit_distance(s,t) - Min insert/delete/substitute.

Graph & Trees

- edges_to_tree(n,edges) - Missing edges to form tree.
- newick_distance(tree,a,b) - Simple distance (labels).

Utilities

- parse_fasta(text) - Parse FASTA into dict.