

HW#5, CSCI 323, Spring 2003
Department of Computer Science
Queens College
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Due: May 19 (Monday), 2003

Problem 1. R-7.12

Problem 2. C-7.7

Problem 3. C-7.8

Problem 4.

A DNA molecule is one of four possible types:

Adenine (A), Thymine (T), Guanine (G), Cytosine (C)

Use the score function

$$\sigma(x, y) = \begin{cases} 1, & \text{for an exact match} \\ -3, & \text{for mismatch or matching with a space} \end{cases}$$

to align the following two sequences:

$$S = \text{ATGACTCATCTG}, \quad T = \text{ATCGAATAAG}$$

Give all possible alignments that can produce the highest total score.