

CMPT 441 - 711 Homework Assignment 3, Fall 2014
Due date: Nov 10, 2014

1. Problem 11.2 (pp 407) in Jones and Pevzner.
2. Problem 11.4 (pp 407) in Jones and Pevzner.
3. Problem 11.5 (pp 407) in Jones and Pevzner.
4. Problem 11.6 (pp 408) in Jones and Pevzner.
5. Given a hidden markov model M and an observation sequence X , we are given that M was in state q at step i . Describe an algorithm that computes the most likely state (transition) sequence R that M goes through to generate X .
6. Given the hidden markov model M to compute the optimal alignment between two sequences X and Y , where the joint symbol generation probabilities are denoted as $p_{a,b}$ and the independent symbol generation probabilities are denoted as q_a , describe an algorithm to compute the probability that given x_i (the i^{th} symbol of X) it is aligned with y_j (the j^{th} symbol of Y).