Question 2.1: Viterbi pseudocode (30 points total)

2.1 Pseudocode for Viterbi algorithm:

Viterbi(w1..n)

For t(1….T) // Initialization

Trellis[1][t] = start\_score[t] + emission\_score[t][w1]

For i(2..n){

For t(1…T){

Trellis[i][t] = 0

For t’(1…T){

tmp = trellis[i-1][t’] + transition[t’][t]

If(tmp>trellis[i][t]){

trellis[i][t] = tmp

backpointer\_lookup[i][t] = tmp

trellis[i][t] = emission[t][wi]}}

t\_max == NULL

vit\_max =0

for t(1..T)

if(trellis[n][t] > vit\_max){t\_max = t; vit\_max = trellis[n][t]}

return unpack(n,t\_max)

unpack(n..1){

i=n

tags = new array[n+1]

while(i>0){

tags[i] =t

t = backpointer[i][t]

i—

}

return tags;

}