

**START OF QUIZ**

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## Question 1

Topic: Lecture 1

Source: Lecture 1

Do you think cosine similarity is more similar to Hamming distance or Levenshtein distance? Explain. Also briefly explain how it differs from your choice. (2)

## Question 2

Topic: Lecture 4

Source: Lecture 4

What is the main difference between the Viterbi algorithm and the Forward algorithm, and why does it allow us to find the optimal path through a sequence? (1)

## Question 3

Topic: Lecture 3

Source: Lecture 3

Imagine that we are doing machine translation instead of POS-tagging. What would be the equivalent of emission probabilities and transition probabilities? Explain. (2)

## Question 4

Topic: Lecture 3

Source: Lecture 3

Describe the noisy channel model, and how it can be used to represent [Machine Translation, ASR, POS-tagging]. (1)

## Question 5

Topic: Lecture 2

Source: Lecture 2

Why is the Forgy initialization sub-optimal? (1)

## Question 6

Topic: Lecture 4

Source: Lecture 4

Why can we use logarithms for the Viterbi algorithm, but not the forward algorithm? (1)

## Question 7

Topic: Lecture 1

Source: Lecture 1

Explain what modifications would need to be made to our dynamic edit distance algorithm to incorporate weighted edit distance. (2)



## Question 8

Topic: Lecture 2

Source: Lecture 2

Discuss the purpose of the linkage criterion in hierarchical clustering (1)

## Question 9

Topic: Long

Source: Lecture 3

In class, we built a collocation matrix for a bigram language model. Modify the function so that it can handle a trigram language model and implements "add-alpha" smoothing, instead of "add-one" smoothing. (3)

**END OF QUIZ**