

**START OF QUIZ**

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## Question 1

Topic: Lecture 3

Source: Lecture 3

In class, we discussed how CFGs do not explicitly allow for optionality in the grammar. How can we adapt our grammars to allow for optional elements? (1)

## Question 2

Topic: Lecture 2

Source: Lecture 2

What properties of English syntax make regular expressions suitable for chunking? Do you think that this functionality would extend to many other languages? Briefly explain. (1)

### Question 3

Topic: Lecture 1  
Source: Lecture 1

English is an SVO (Subject-Verb-Object) language, but only most of the time. Can you think of an example where this order is violated? Why do you think this doesn't confuse speakers of English? (1)

## Question 4

Topic: Lecture 1

Source: Lecture 1

Write the parenthetical parse of the following sentence: "I will not eat green eggs and ham." (1)

## Question 5

Topic: Lecture 3

Source: Lecture 3

What is meant by "context-free" in a context-free grammar? Why is this sufficient to represent most language, which we know is very contextually dependent? (1)

## Question 6

Topic: Lecture 2

Source: Lecture 2

Imagine you're working on analysing customer feedback, and your boss wants you to identify the most common complaints. How might you use your parsing knowledge to automate and distill the most common complaints? You can assume that complaints have already been labeled with the product they are complaining about. You can also assume that just sorting the frequency of tokens is going to be insufficient. (2)

## Question 7

Topic: Lecture 4

Source: Lecture 4

Basque is an "ergative-absolutive" language - instead of defining NPs with respect to labels such as "subject" and "direct object", NPs are defined with respect to "subject of a transitive verb" (ergative) or "subject of an intransitive verb OR object of a transitive verb" (absolutive). Explain what features would need to be defined in such a grammar, and how they would interact (you can assume a similar SVO order as English). (2)



## Question 8

Topic: Lecture 4

Source: Lecture 4

Given two parse trees, calculate the PARSEVAL score. Also briefly describe whether any errors are "syntacto-semantic" errors (ie, an error that requires real-world knowledge to arrive at the correct parse). 1: (S (NP (DT The) (JJ quick) (JJ brown) (NN fox)) (VP (VBZ jumps) (PP (IN over) (NP (DT the) (JJ lazy) (NN dog)))))) (2): (S (NP (NP (DT The) (NP (JJ quick) (NP (JJ brown) (NN fox))))) (VP (VBZ jumps) (PP (IN over) (NP (DT the) (JJ lazy) (NN dog))))))

## Question 9

Topic: Long

Source: Lecture 4

Imagine you're building a tool to help second language learners of language X. You have a grammar of their first language (L1), and a grammar of the language they are trying to learn (X). How might you build a tool that learns how to translate a production from L1 into X? Describe any additional data or tools you might need, and the process you would use to learn a “production-translation grammar”. Also explain how you could use this to create illustrative examples of how the syntax of language X works.

**END OF QUIZ**