

**START OF QUIZ**

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I agree that all answers provided are in my own words, and that I will not discuss the contents of this quiz with any of my fellow students until after the exam period has completed for everyone. Furthermore, any response that used generative AI tools has been rephrased into my own interpretation, and has been appropriately cited.

Signature: \_\_\_\_\_

## Question 1

Topic: Lecture 4

Source: Lecture 4

What does it mean for two feature structures to be incompatible, and what happens during parsing when this occurs? (1)

## Question 2

Topic: Lecture 3

Source: Lecture 3

CFGs do not explicitly allow for optionality. How do we handle optionality in a CFG? (1)

### Question 3

Topic: Lecture 3

Source: Lecture 3

Explain why the following rule: “VP NP -> VBD NN” is not valid in a CFG. (1)

## Question 4

Topic: Lecture 2

Source: Lecture 2

If you had a cascaded pipeline of constituency and dependency parsers, which would you run first? What are the risks of getting it backwards? (1)

## Question 5

Topic: Lecture 2

Source: Lecture 2

In class, every example we had was well-tokenized, but there are parsing cues within the shape of the word (its morphology). Briefly explain how a parser could leverage this, with an example. (1)

## Question 6

Topic: Lecture 1

Source: Lecture 5

Imagine that two linguists are creating a treebank, but even though they have a clear annotation schema, they disagree on annotations about 10 percent of the time. How could you mitigate the effects of this disagreement on your downstream parser? (2)

## Question 7

Topic: Lecture 4

Source: Lecture 4

We've looked at grammars as being constraints that can identify parses, but we could theoretically use them to infer features, instead. Imagine we encountered a new noun in a language with grammatical gender. How might we use a feature-based parser to infer the gender of the noun, and use that information to expand our grammar? (2)

## Question 8

Topic: Lecture 1

Source: Lecture 5

You are building a parser for a language with much freer word order than English. What assumptions do you need to weaken before building the parser. Do you think it will have much of an impact on the quality of the parser? (2)

## 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), a grammar of the language they are trying to learn (X), and a parallel corpus of L1-X sentences. How might you use this data to learn a new grammar that translates the syntax of L1 into the syntax of X, for the purpose of creating educational tools that will help the language learner associate features of X with their L1? (For example, a French-English grammar might have something like NP -> NN JJ : NP -> JJ NN). (3)

# END OF QUIZ