

**START OF QUIZ**

**Student ID:**

**46280228,Guo,Gilly**

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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 3

Source: Lecture 3

Explain why the following rule: “with  $\rightarrow$  IN” is not valid in a CFG. (1)

## Question 2

Topic: Lecture 4

Source: Lecture 4

Briefly describe “fence-posting”, and why it’s useful for parsing evaluation. (1)

### Question 3

Topic: Lecture 4

Source: Lecture 4

Why do we not evaluate parsers by the number of correct nodes in the tree? (1)

## Question 4

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 5

Topic: Lecture 1

Source: Lecture 5

Up to this point, we've largely ignored function words, but they are extremely influential in parsing. Give 2 reasons why. (1)

## Question 6

Topic: Lecture 2

Source: Lecture 2

Imagine you've been assigned the task of converting instructions in a recipe into a list of easy-to-accomplish goals for a cooking robot. How could you use a parser to aid your conversion? (2)

## Question 7

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 8

Topic: Lecture 3

Source: Lecture 3

Post-positive adjectives are adjectives that occur after the noun phrase they are modifying (such as "attorney/surgeon general", "somewhere nice", "nothing important"). Given that they tend to occur in set phrases, do you think it would be better to write a general class of PostAdj, and create PostAdj phrases in a CFG, or just list them as valid NPs (ie, NP = surgeon general)? Discuss the pros and cons of either decision. (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