START OF QUIZ
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Question 1

Topic: Lecture 7
Source: Lecture 7

Briefly describe how the stack changes for a ARC-LEFT operation. (1)

Question 2

Topic: Lecture 8
Source: Lecture 8

Does Chu-Liu-Edwards algorithm collapse all cycles in a graph? Explain. (1)

Question 3

Topic: Lecture 6
Source: Lecture 6

In class, we mentioned that the Earley and CYK parsers are both cubic complexity, but that in practice, the Earley Parser is typically faster. Why do you think that is? (1)

Question 4

Topic: Lecture 5
Source: Lecture 5

How do we obtain the probabilities for a PCFG? (1)

Question 5

Topic: Lecture 6
Source: Lecture 6

Describe the difference between top-down and bottom-up parsing (1)

Question 6

Topic: Lecture 7
Source: Lecture 7

A deque is a data structure that mimics the operations of both a stack and a queue (ie, items can be added or removed to either end - check your 512 notes!). Do you think this data structure would be sufficient to replace the stack and buffer from SR parsing? Justify your answer. (2)

Question 7

Topic: Lecture 5
Source: Lecture 5

Let's say we wanted to modify PARSEVAL to take ambiguity into account. How might we use a PCFG and two gold references to account for ambiguous parsing? (2)

Question 8

Topic: Lecture 8
Source: Lecture 8

In class, we mentioned that graph-based parsing can handle non-projective parses, but it has cubic time complexity. How would you go about improving the complexity to (mostly) linear time, while still being able to handle non-projective parses? Describe why this solution works. Hint: we talked about a simple solution in class. (2)

Question 9

Topic: Long
Source: Lecture 8

Let's say you have a friend who is developing a constructed language (conlang) for the epic fantasy novel he is writing, but the only language she knows is English, and she is just doing a word-for-word translation of English into this constructed language. She has no real knowledge of syntax, and has only ever thought that "some words come after other words" (she's thinking like a language model). How would you use treebanks and dependency parsers to demonstrate to her that there is a whole "hidden" structure that language must follow, and how would you help her develop a realistic grammar for her conlang? Do you think it would make more sense to build the grammar for a "modified English", and then do word-for-word translation, or to translate the words from English, and then build the grammar in the conlang? (3)

END OF QUIZ