START OF QUIZ
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Question 1

Topic: Lecture 5
Source: Lecture 5

Why do we only care about the ”upper triangle”? (1)

Question 2

Topic: Lecture 7
Source: Lecture 7

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

Question 3

Topic: Lecture 6
Source: Lecture 6

The CYK parser only applies those rules that apply to its tokens, but the Earley parser expands its rules to every viable rule, which seems inefficient. Explain why this doesn't lead to a lot of bad parses. (1)

Question 4

Topic: Lecture 5
Source: Lecture 5

Imagine we extended our algorithm to allow for ternary branching (ie, 3 NTs on the RHS). What impact would that have on the complexity of the CYK algorithm? (1)

Question 5

Topic: Lecture 6
Source: Lecture 6

Describe the purpose of the dot. (1)

Question 6

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 7

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 8

Topic: Lecture 8
Source: Lecture 8

Imagine that we have a dependency parser that has a very good UAS (90+), but a very bad LAS (50-). Do you think that we could use the output of this parser as input to a neural translation model as is, or do you think that we should first re-train the labeling part of the algorithm to increase LAS? Doing both is probably the best solution, but I'm asking if you think that we could use the output of the existing model, even as we try to improve the quality of the labels. Explain. (2)

Question 9

Topic: Long
Source: Lecture 6

Often, modern NLP tools work not with words, but with subword units. What modifications would we need to make to the Earley parser in order to work with subword units (for example: ”agreement” might get split into ”agree” and ”-ment”). Where would they need to occur in the parser, and how do you think it might benefit and harm the algorithm? (3)

END OF QUIZ