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 5
Source: Lecture 5

Describe why CNF is necessary for the CYK algorithm. (1)

Question 2

Topic: Lecture 7
Source: Lecture 7

What is a projective sentence? Why does this matter for the shift-reduce algorithm? (1)

Question 3

Topic: Lecture 8
Source: Lecture 8

When learning CLE, why can't we just take the maximal score out of (or into) each node? (1)

Question 4

Topic: Lecture 5
Source: Lecture 5

Describe the difference between top-down and bottom-up parsing, including one advantage to each. (1)

Question 5

Topic: Lecture 6
Source: Lecture 6

What does it mean for an Earley item to be "complete," and what happens when it is? (1)

Question 6

Topic: Lecture 6
Source: Lecture 6

Imagine that we want to take the best of both worlds of the CYK parser and the Earley parser. To take advantage of parallel processing, we create a "meet-in-the-middle" parser that simultaneously starts parsing from the top and the bottom. Describe at least 2 difficulties with this approach. (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). 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

In class, we discussed creating a feature vector as input to a classification model. What benefits (or disadvantages) might we see by replacing binary features with word embeddings, instead? (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? Do you think this would be easier to handle with CYK? (3)

END OF QUIZ