You are not allowed to co-operate with your fellow classmates on this exam. Clarification questions should be sent to me. In evaluating your responses, I will grade you on correctness, clarity, and precision. Your answers should present clearly the logic behind your choices.

1. Consider the following set of data:

   (1) a. [If John$_i$ is anxious], he$_{i/j}$ always frowns.
   b. [If he$_{i/j}$ is anxious], John$_i$ always frowns.
   c. He$_{j/s}$ always frowns [if John$_i$ is anxious].
   d. John$_i$ always frowns [if he$_{i/j}$ is anxious].

   a. Setting aside the evidence from binding theory, what trees are possible for the examples in (1)? Provide all the trees for (1a/b) and all the trees for (1c/d). (24 pts.) You should make the following assumptions:

   (2) a. Treat if as a C, and the entire if-clause as an S-bar.
   b. To handle attachment of the if-clause S-bar, we can assume the following phrase structure rules in addition to the ones we already have:
      i. S $\rightarrow$ $\tilde{S}$ NP VP
      ii. S $\rightarrow$ $\tilde{S}$ S
      iii. S $\rightarrow$ NP VP $\tilde{S}$
      iv. S $\rightarrow$ S $\tilde{S}$
      v. VP $\rightarrow$ V (NP) $\tilde{S}$
      vi. VP $\rightarrow$ VP $\tilde{S}$

   b. Which of the trees generated by the rules in (2) are ruled out by the evidence from binding theory? Consequently, which of the rules given above must be rejected? You must provide the reasoning behind your answer for this question. No credit will be awarded for merely providing the answer. (18 pts.)
2. The following examples involve four Noun Phrases and are all ungrammatical for reasons pertaining to binding theory. Construct trees for each example and identify the source of the ungrammaticality.

(3) (24 pts. overall)
   a. *He, thinks that [his, podiatrist], likes John.
   b. *[Paula’s, sister], believes that [her, taxidermist], likes herself.
   c. *[The seamstress], doubts that she, likes [her, fishmonger].
   d. *[The cook’s, wife], suspects that [[the thief’s, lover], loathes him].

(3 pts. for each tree, 3 for the source of the ungrammaticality)

3. The following example is many-ways structurally ambiguous.

(4) They decided that they should read this book on the moon.

a. Identify the ambiguities, construct trees for each interpretation, and indicate which interpretation goes with which tree. (15 pts., 3 pts. for each tree, 2 pts. for the interpretation)

b. The following minimal variation of (4) cannot be interpreted in all of the ways possible for (4).

(5) They decided on the moon that they should read this book.

Indicate which readings are available, which ones are absent, and draw trees for the available reading(s). (9 pts.)

c. Explain why (4) and (5) differ in the way they do. (10 pts.)