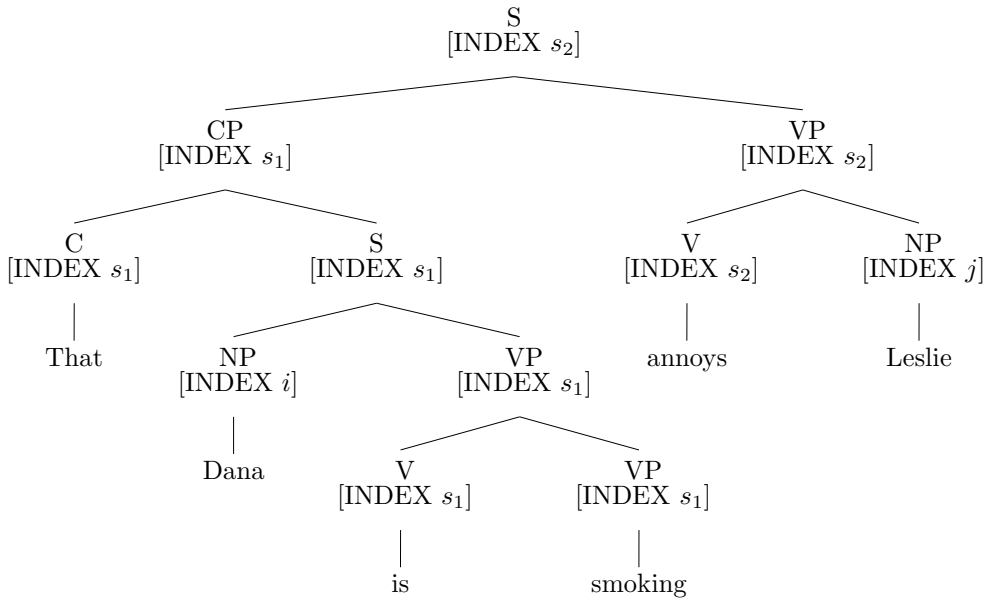
Chapter 11, Problem 3: Passing Up the Index

A.
$$\begin{bmatrix} \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Dana} \\ \text{NAMED} & i \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{smoke} \\ \text{SIT} & s_1 \\ \text{SMOKER} & i \end{bmatrix}, \right. \\ & \left. \begin{bmatrix} \text{RELN} & \text{annoy} \\ \text{SIT} & s_2 \\ \text{ANNOYED} & j \\ \text{ANNOYANCE} & s_1 \end{bmatrix}, \begin{bmatrix} \text{RELN} & \text{name} \\ \text{NAME} & \text{Leslie} \\ \text{NAMED} & j \end{bmatrix} \right\rangle \end{bmatrix}$$

(We have omitted the '. . . ' that usually stand in for the tense information.)

B.



C. The SIT value of the *smoke* relation is identified with the ANNOYANCE value of the *annoy* relation via the following 11 identities:

1. The lexical entry for *smoke* identifies its INDEX with the SIT value of the *smoke* relation inside its RESTR.
2. The lexical entry for *be* (inflected as *is* in this example) identifies the INDEX of its complement with its own INDEX.
3. The Head-Complement Rule identifies the VP *smoking* with the complement requirement of *is*.
4. The Semantic Inheritance Principle 'passes up' the INDEX of *is* to the VP *is smoking*.
5. The Semantic Inheritance Principle 'passes up' the INDEX of the VP *is smoking* to S *Dana is smoking*.
6. The lexical entry for *that* identifies its INDEX with the INDEX of its complement.
7. The Head-Complement Rule identifies the S *Dana is smoking* with the complement requirement of *that*.
8. The Semantic Inheritance Principle 'passes up' the INDEX from *that* to the CP *that Dana is smoking*.
9. The Head-Specifier Rule identifies the CP *that Dana is smoking* with the specifier requirement of the VP *annoys Leslie*.

10. The Valence Principle identifies the specifier requirement of the VP *annoys Leslie* with the specifier requirement of *annoys*.
11. The lexical entry for *annoy* identifies the INDEX of its specifier with the ANNOYANCE role in its *annoy* relation.