1. Propose a possible mechanism for the following reaction.

$$\begin{array}{c|c}
R_1 \\
\downarrow \\
R \\
\downarrow \\
N \\
O
\end{array}$$

2. What is the mechanism for the following transformation?

$$R = CH_2C_6H_4(o-Me)$$

3. Explain the following transformation?