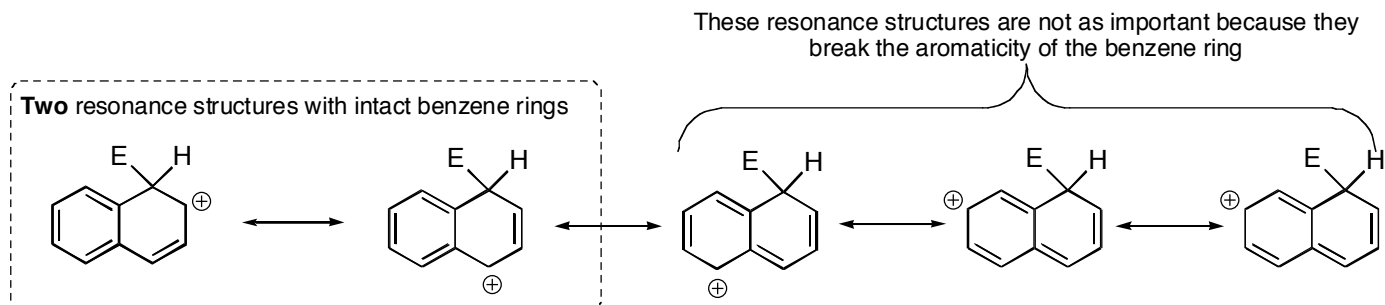


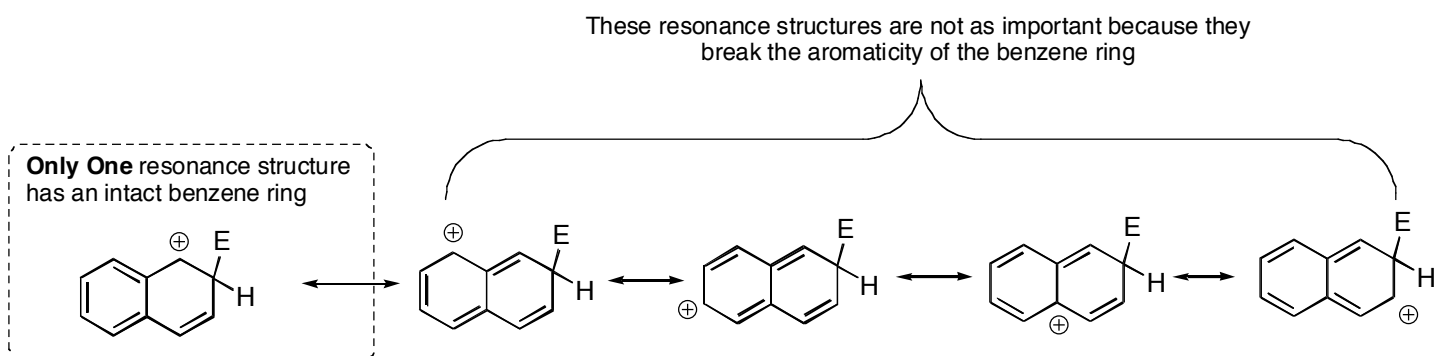
1. Substitution takes place at the α -carbon because it has more resonance structures with intact benzene rings.

α -intermediate



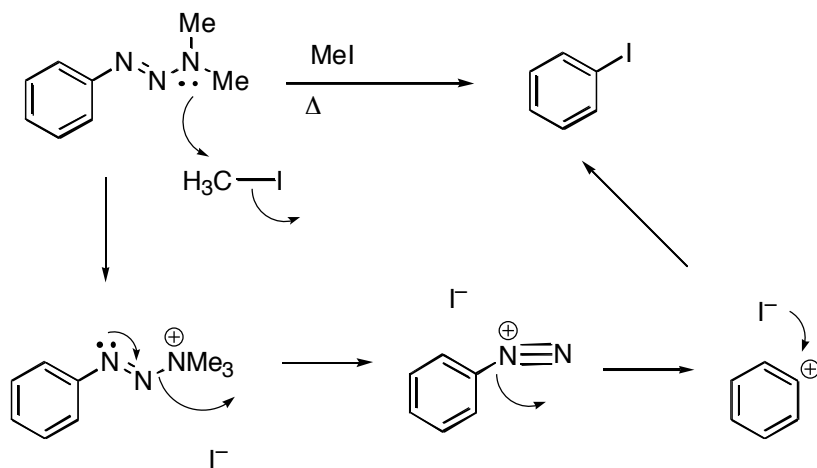
in contrast, substitution at the β -carbon gives an intermediate with only one resonance structure with an intact benzene.

β -intermediate



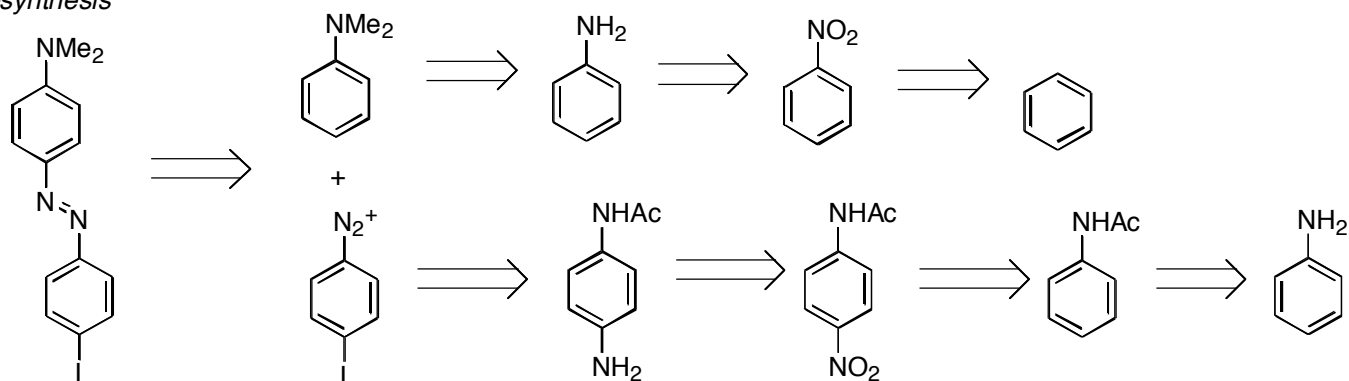
Thus, while both situations have the same quantity of possible resonance forms, the α -intermediate has 'higher quality' resonance structures available

2. Provide a detailed mechanism

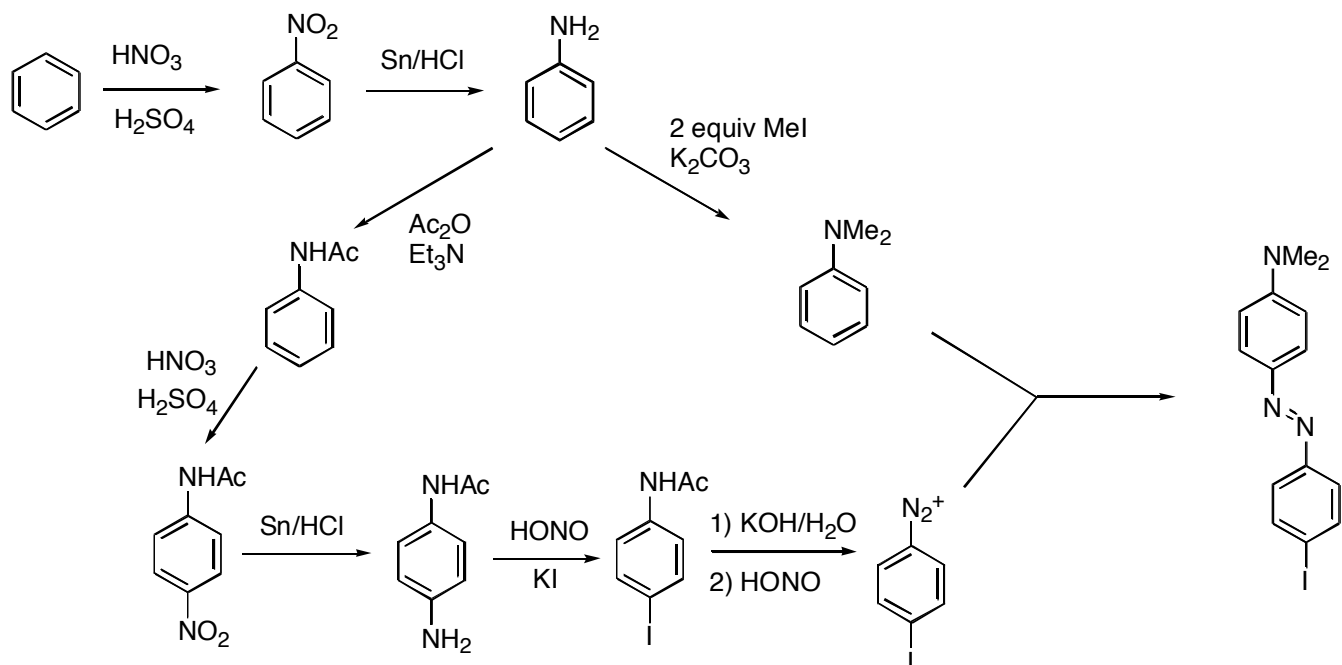


3a

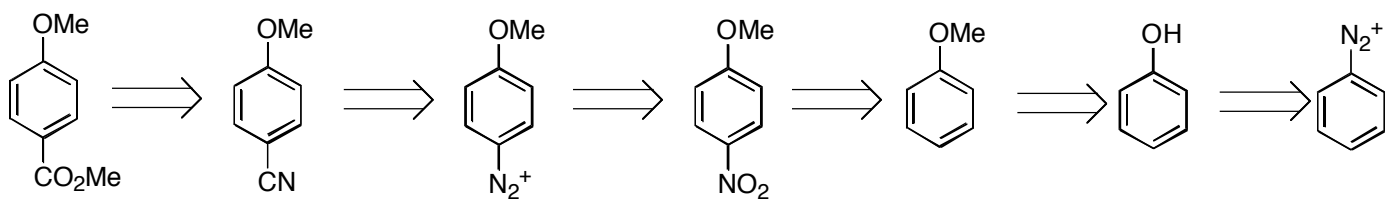
retrosynthesis



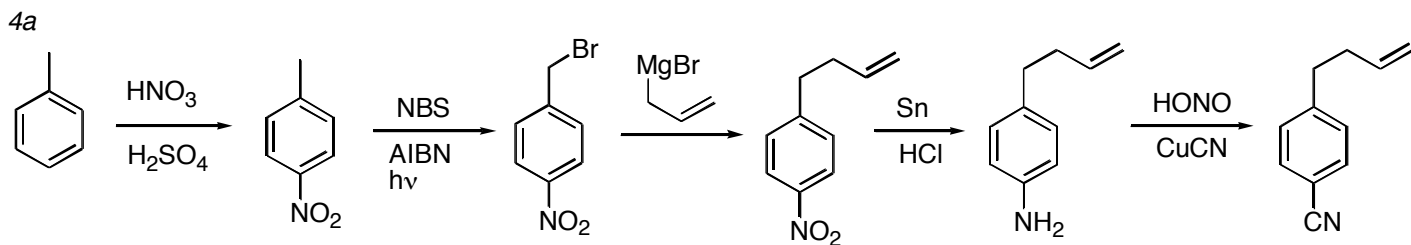
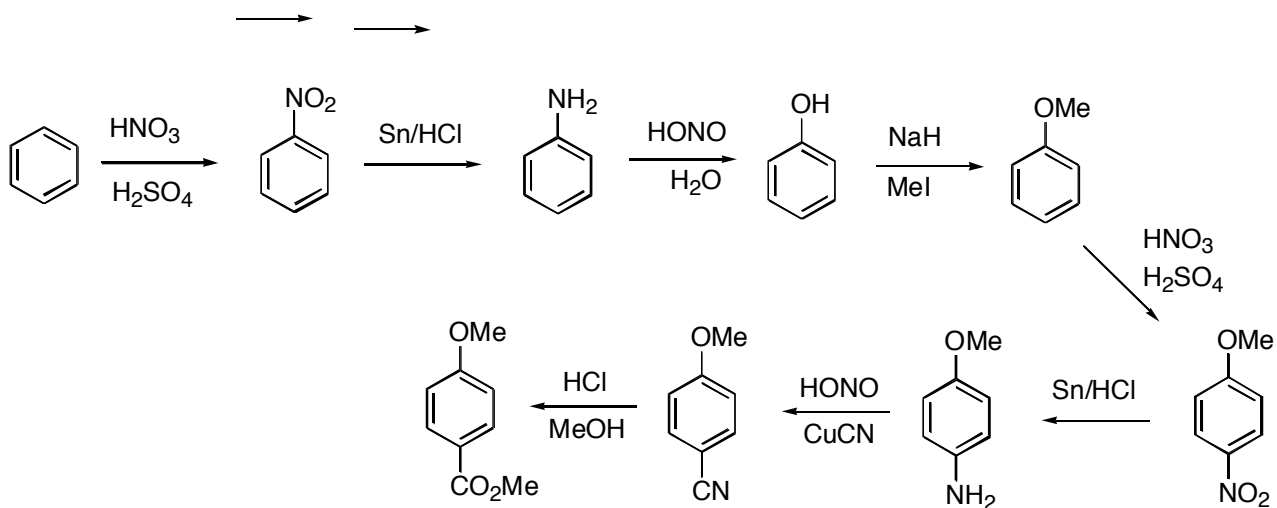
forward synthesis



3b
retrosynthesis



forward synthesis



4b

