1. Write the enols which could be formed from the following ketone.

![Chemical structure]

2. Give the mechanism of the following reaction showing all intermediates and electron-pushing arrows.

(a) ![Chemical structure]

1. LDA
2. CH₃CH₂Br

(b) ![Chemical structure]

HBr
Br₂

(c) ![Chemical structure]

1. NaOCH₃
2. CH₃Br

(d) ![Chemical structure]

NaOH
H₂O
intramolecular

(e) ![Chemical structure]

1. LDA
2. NaOCH₃

2. Give the products of the following reactions showing stereochemistry in 3-D where possible and all stereoisomers that are formed.

(a) ![Chemical structure]

1. LDA
2. CH₃CH₂Br

(b) ![Chemical structure]

HBr
Br₂

(c) ![Chemical structure]

1. NaOCH₃
2. CH₃Br

(d) ![Chemical structure]

NaOH
H₂O
intramolecular

(e) ![Chemical structure]

1. LDA
2. NaOCH₃

3. Show how you would accomplish the following synthesis. Include all reagents and isolated products. Use a crossed aldol condensation to start.

![Chemical structure]