1. For the following compounds, assign the stereochemical relationship between the two faces of the sp² centers. (3 pts)

- A, F
- B, C
- D, E

2. Draw the structures of the major organic products of the following reactions in the boxes. Clearly indicate the absolute configuration of the products. Provide an explanation for your stereoselectivity. (10 pts)

- Zimmerman-Traxler model for syn-aldol product
- Felkin-Ahn model for aldehyde face selectivity

Me and -OH are syn
Me′ and -OH are syn
3. Provide the structures of the major organic product for the following reactions. Clearly indicate the stereochemistry if applicable. (2 pts each)

1) \( \text{PhO} \xrightarrow{\text{LiAlH}_4} \text{PhOH} \)

2) \( \text{Cl} \xrightarrow{\text{NaBH}_4} \text{ClOH} \)

3) \( \text{PhOCO} \xrightarrow{\text{MeMgBr}} \text{PhO} \)

4) \( \xrightarrow{\text{CH}_3\text{CO}_2\text{H}} \)

5) \( \xrightarrow{\text{LDA, } -78 \,^\circ\text{C}} \xrightarrow{\text{PhCH}_2\text{Br}} \text{Bn} \)

6) \( \xrightarrow{\text{ClB(c-Hex)_2, Et}_3\text{N}} \xrightarrow{\text{TBSCl}} \text{OTBS} \)