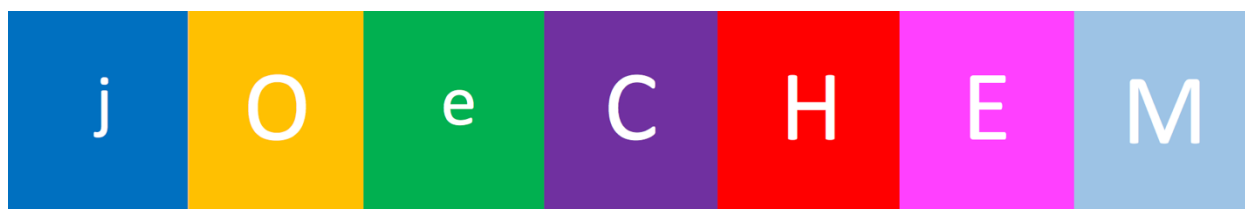
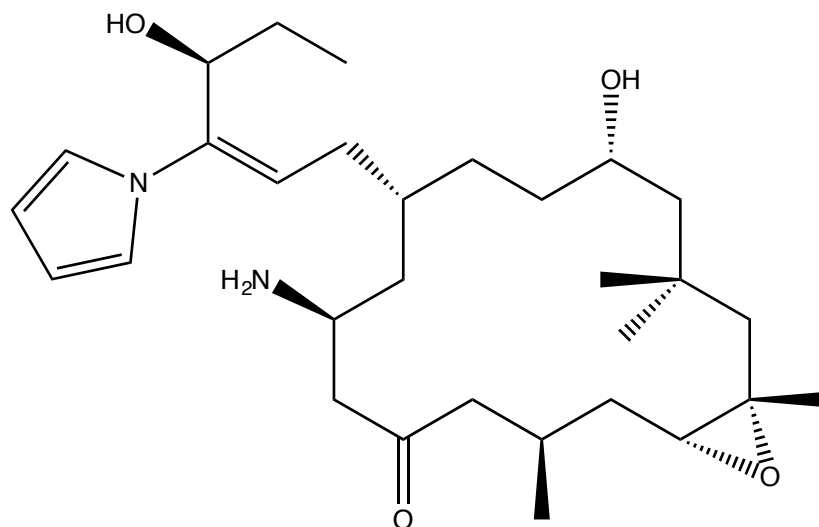


Organic Chemistry I

Exam 2



- 1.) Given the molecule below, **identify all the stereocenters** and **correctly assign the stereochemical configurations** (assign R&S where appropriate and assign correctly).



- 2.) The following True-False questions below are to see if you truly understand the principles/terminology of stereochem. Circle T for true, F for false:

a.) A chiral molecule has a non-superimposable mirror image and is optically active.

T F

b.) A molecule is **always** chiral as long as it has one or more stereocenters.

T F

c.) A meso structure has an enantiomer.

T F

d.) Enantiomers and diastereomers are 2 types of stereoisomers.

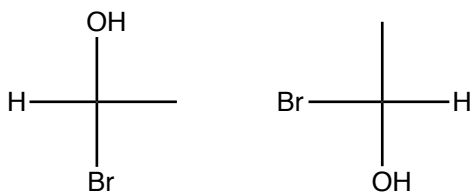
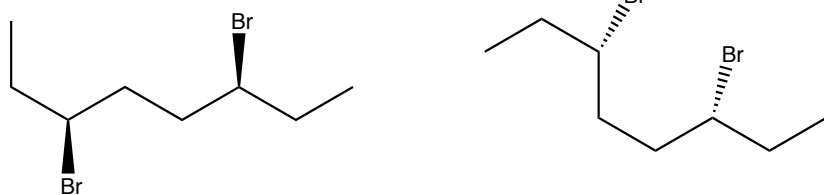
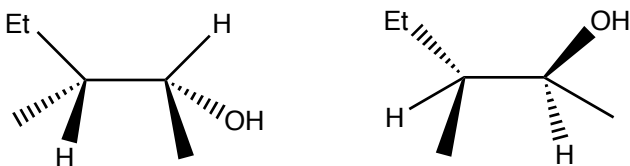
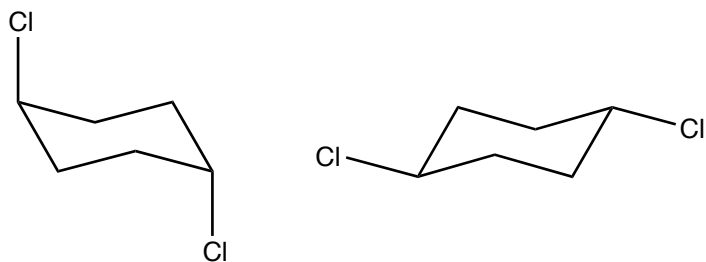
T F

a.) Racemic mixtures exhibit a **net** optical activity.

T F

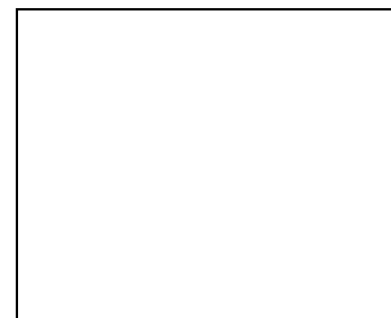
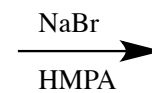
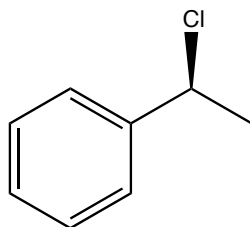
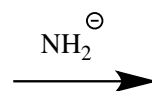
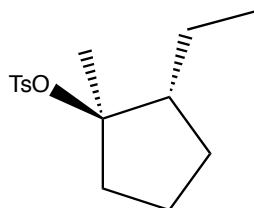
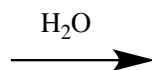
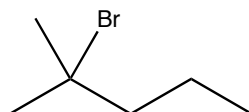
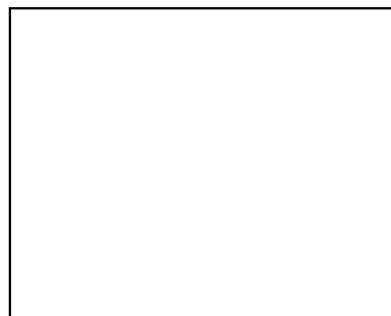
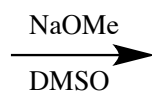
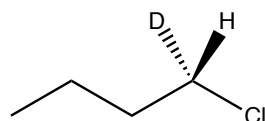
- 3.) For the following molecules pairs below, identify relationship between the pair as:
- The same molecule
 - Different structures completely
 - Structural isomers
 - Enantiomers
 - Diastereomers

Relationship



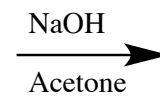
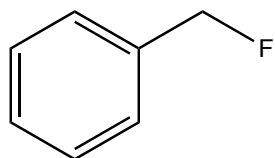
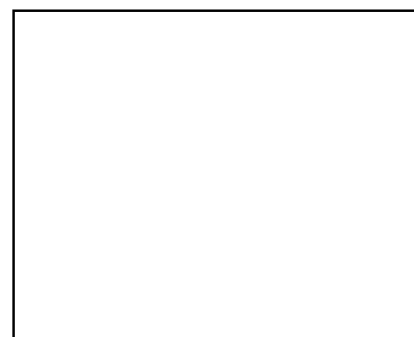
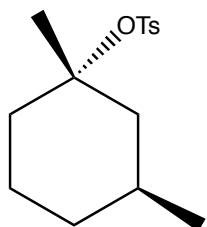
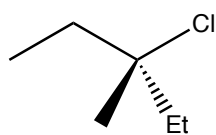
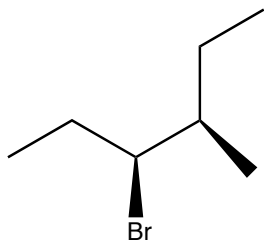
- 4.) Given the following reactions, **predict the correct product, or NR** if no reaction takes place. If a reaction did occur, on the far left indicate which of the 4 reaction types occurred, either S_N2 , E2, S_N1 (ignore E1 since it causes minor products). Take note of stereochemistry where applicable **and/or** indicate if a racemic mixture is produced.

Rxn Type:

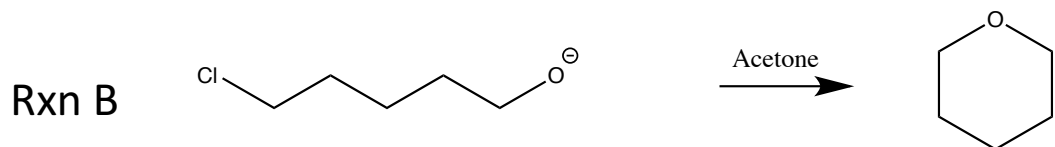
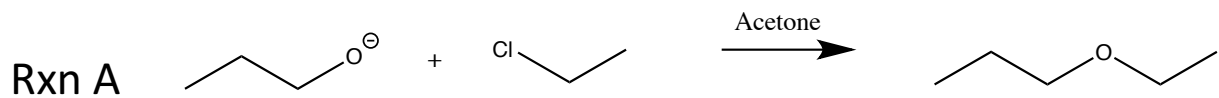


4.) (continued)

Rxn Type:



5.) Below, two S_N2 reactions are shown, Rxn A and Rxn B. Of the two, pick the ***faster*** reaction, and draw its mechanism. Then ***briefly*** explain why the reaction you picked is faster than the other.



Mechanism and Explanation: