## **CHEM 243 Organic Chemistry I**

Points\_\_\_\_\_\_ (10 max)

Worksheet #13: October 18, 2024. Complete the following worksheet by collaborating with a group of 3-4 students. You can use a text book or your lecture video notes. You must work together, with the names of all students included on ONE sheet and turned in for a group grade.

### (1) Nomenclature.

- If a name is given draw an accurate zig-zag structure, using wedge and dash bonds for all chiral carbons.
- If a structure is drawn, give the IUPAC name where you assign configurations using the proper R/S prefix.

(a) (1S, 3R)-1,6-dichloro-1-cyclopropyl-3-methyl hexane

(b)

# (2) Stereoisomers - Fisher Projections I (Configurations and Nomenclature)

(a) Label each chiral center as R/S for the organic compound represented by the Fisher Projection drawn to the right.

(b) Draw an accurate zig-zag line structure for the organic compound represented by the Fisher Projection. Start by identifying the parent chain, then all substituents. Be sure to show the proper configuration at all chiral carbons using wedge and dash bonds.



(c) Give an IUPAC name for the structure you drew above, where you assign configurations using the proper R/S prefix.

## (3) Stereoisomers - Fisher Projections II (Meso Compounds)



(d) Are these compounds (A-2 and B-2) Meso compounds? EXPLAIN your answer (there are TWO key points).

#### (4) Stereoisomers - Fisher Projections III (Meso Compounds)



(c) Is this a Meso compound? **EXPLAIN** your answer (there are TWO key points).

(5) **REVIEW - Calculations: % Yield.** Be sure to use correct significant figures and units.

Compound A (C<sub>5</sub>H<sub>8</sub>) was reacted with HBr and converted into Compound B (C<sub>5</sub>H<sub>9</sub>Br):



0.2409 g of Compound A were reacted with 10.00 g of HBr and converted into 0.4790 g of Compound B.

Complete the following table to determine the Limiting reactant and to calculate the % Yield.

Compound	Molecular mass	grams	moles
Compound (A) C <sub>5</sub> H <sub>8</sub>	68.11 g/mole		
HBr	80.91 g/mole		
CIRCLE the Limiting Reactant from above (this is the Theoretical yield in moles)			
Compound (B) C5H9Br	149.0 g/mole		
			% Yield =

Show your calculation work in the space below: