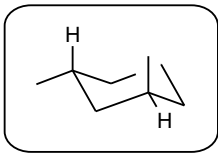
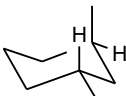
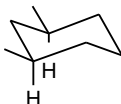
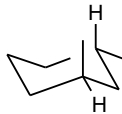
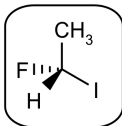
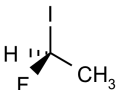
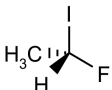
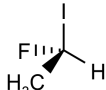
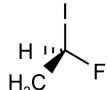
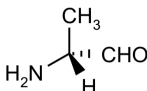
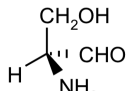
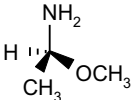
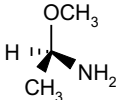
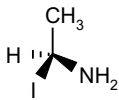
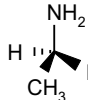


# EXERCISE TEST No. 4 – Chirality

1.	Indicate the enantiomer of the highlighted 1,3-dimethylcyclohexane.
	 <span style="margin: 0 20px;"><b>1</b></span>  <span style="margin: 0 20px;"><b>2</b></span>  <span style="margin: 0 20px;"><b>3</b></span> 
	A) 1.                      B) 2.                      C) 3.                      D) All.
2.	Indicate the sequence of priorities required to assign the absolute configuration to the following molecule in Fisher projection.
	$\begin{array}{c} \text{NH}_2 \\   \\ \text{H} - \text{C} - \text{CONH}_2 \\   \\ \text{CCH} \end{array}$
	A) $-\text{NH}_2 > -\text{CONH}_2 > -\text{C}\equiv\text{CH} > -\text{H}.$ B) $-\text{CONH}_2 > -\text{C}\equiv\text{CH} > -\text{NH}_2 > -\text{H}.$ C) $-\text{C}\equiv\text{CH} > -\text{NH}_2 > -\text{CONH}_2 > -\text{H}.$ D) $-\text{NH}_2 > -\text{C}\equiv\text{CH} > -\text{CONH}_2 > -\text{H}.$
3.	Indicate how many of the structures listed are enantiomers of the highlighted molecule.. <sup>1</sup>
	 <span style="margin: 0 20px;"></span> <span style="margin: 0 20px;"></span> <span style="margin: 0 20px;"></span> <span style="margin: 0 20px;"></span>
	A) 1.                      B) 2.                      C) 3.                      D) 4.
4.	Indicate which compound is an R-series enantiomer.
	<span style="margin: 0 20px;"><b>1</b></span>  <span style="margin: 0 20px;"><b>2</b></span> 
	A) <b>1</b> = Yes; <b>2</b> = Yes.                      B) <b>1</b> = Yes; <b>2</b> = No. C) <b>1</b> = No; <b>2</b> = Yes.                      D) <b>1</b> = No; <b>2</b> = No.
5.	Indicate which pair of formulas represents a pair of enantiomers..
	<span style="margin: 0 20px;"><b>1</b></span>  <span style="margin: 0 20px;"></span> <span style="margin: 0 20px;"><b>2</b></span>  <span style="margin: 0 20px;"></span>
	A) <b>1</b> = Yes; <b>2</b> = Yes.                      B) <b>1</b> = Yes; <b>2</b> = No. C) <b>1</b> = No; <b>2</b> = Yes.                      D) <b>1</b> = No; <b>2</b> = No.

<sup>1</sup> Each chiral molecule has only one enantiomer, which can have different representations.

6.	Indicate which compound is both a D-series enantiomer and an R-series enantiomer.			
	<b>1</b>	$\begin{array}{c} \text{CHO} \\   \\ \text{H} - \text{C} - \text{F} \\   \\ \text{CH}_3 \end{array}$	<b>2</b>	$\begin{array}{c} \text{CO}_2\text{H} \\   \\ \text{F} - \text{C} - \text{H} \\   \\ \text{CH}_3 \end{array}$
	A) <b>1</b> = Yes; <b>2</b> = Yes. C) <b>1</b> = No; <b>2</b> = Yes.		B) <b>1</b> = Yes; <b>2</b> = No. D) <b>1</b> = No; <b>2</b> = No.	
7.	Indicate how many stereoisomers the following compound has.			
	$\text{CH}_3\text{CH}_2\text{CHOHCH}(\text{CH}_3)\text{CHClCH}(\text{CH}_3)_2$			
	A) 2.		B) 8.	
	C) 4.		D) 16.	
8.	To assign the correct stereochemistry, indicate the group with the highest priority.			
	A) -NHCH <sub>3</sub> .		B) -COCH <sub>3</sub> .	
	C) -CN.		D) -CO <sub>2</sub> CH <sub>3</sub> .	
9.	Indicate which compound is both a D-series enantiomer and an R-series enantiomer.			
	<b>1</b>	$\begin{array}{c} \text{CHO} \\   \\ \text{F} - \text{C} - \text{CH}_3 \\   \\ \text{H} \end{array}$	<b>2</b>	$\begin{array}{c} \text{CH}_2\text{OH} \\   \\ \text{H}_2\text{N} - \text{C} - \text{CHO} \\   \\ \text{H} \end{array}$
	A) <b>1</b> = Yes; <b>2</b> = Yes. C) <b>1</b> = No; <b>2</b> = Yes.		B) <b>1</b> = Yes; <b>2</b> = No. D) <b>1</b> = No; <b>2</b> = No.	
10.	Indicate the relationship between the two compounds.			
	$\begin{array}{c} \text{Br} \\   \\ \text{H} - \text{C} - \text{CH}_3 \\   \\ \text{H}_3\text{C} - \text{C} - \text{Cl} \\   \\ \text{H} \end{array}$		$\begin{array}{c} \text{CH}_3 \\   \\ \text{H} - \text{C} - \text{Br} \\   \\ \text{Cl} - \text{C} - \text{H} \\   \\ \text{CH}_3 \end{array}$	
	A) Enantiomers. B) Diastereomers. C) Same compound; it is a meso compound. D) Same compound; it is not a meso compound.			
11.	To assign stereochemistry, indicate which order of priority is correct.			
	(1) -CN > -CH <sub>3</sub> ; (2) -SCH <sub>3</sub> > -NH <sub>2</sub> .			
	A) <b>1</b> = Yes; <b>2</b> = Yes. C) <b>1</b> = No; <b>2</b> = Yes.		B) <b>1</b> = Yes; <b>2</b> = No. D) <b>1</b> = No; <b>2</b> = No.	
12.	Indicate which compound is chiral.			
	(1) CH <sub>2</sub> BrCH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> Br; (2) CH <sub>3</sub> CBr <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> .			
	A) <b>1</b> = Yes; <b>2</b> = Yes. C) <b>1</b> = No; <b>2</b> = Yes.		B) <b>1</b> = Yes; <b>2</b> = No. D) <b>1</b> = No; <b>2</b> = No.	

13. Considering that only carbon, hydrogen, and a single oxygen atom are used, indicate the molecular formula of the non-cyclic chiral aldehyde with the lowest molecular weight.

A)  $\text{C}_3\text{H}_6\text{O}$ .

B)  $\text{C}_4\text{H}_8\text{O}$ .

C)  $\text{C}_5\text{H}_6\text{O}$ .

D)  $\text{C}_6\text{H}_{12}\text{O}$ .