

Chapter 5 Problems - *Lewis Structures and Isomers*

For each molecule in the chart below, draw a Lewis structure, determine the bond angle(s) and the molecular polarity (P = polar, N = non-polar). Note that elements through the second period (Ne) virtually never exceed the octet rule. Also hydrogen has one and only one bond and carbon almost always has four bonds (except for carbon monoxide and cyanide ion).

<u>Molecule</u>	<u>Lewis Structure</u>	<u>Angle</u>	<u>Bond Polarity</u>
1. F ₂		_____	
2. N ₂		_____	
3. ICl		_____	
4. CO ₂		_____	_____
5. H ₂ O		_____	_____
6. H ₂ O ₂		_____	_____
7. SO ₂		_____	_____
8. NH ₃		_____	_____
9. CH ₄		_____	_____
10. C ₂ H ₆		_____	_____
		H-C-H	

		H-C-C	

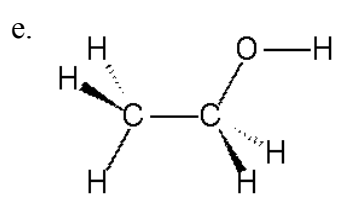
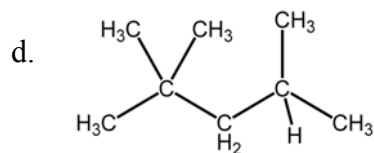
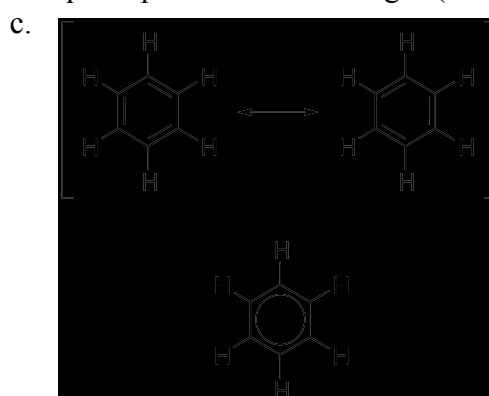
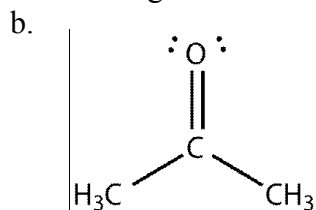
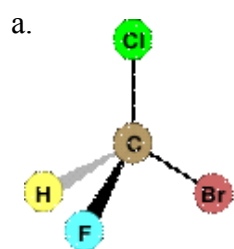
11. C_2H_4



12. Non-superimposable mirror images are called enantiomers. Which statement is not true about enantiomers?

- they rotate the plane of polarized light in equal but opposite directions.
- they interact with other enantiomers or enantiomeric sites differently
- they have identical melting point, boiling points and densities
- none of the above (all are true)

13. Which one of the following would have non-superimposable mirror images (enantiomers)?



24. Which one of the following fatty acids has a trans (E) double bond?

- elaidic acid
- stearic acid
- oleic acid
- linoleic acid
- none of the above

