

**Quiz #1 Ch 1-3 Fall 07 (20 questions for 20 points)**

Name \_\_\_\_\_

**If you do not want your graded quiz placed in the box outside my office, then please check here \_\_\_\_\_**

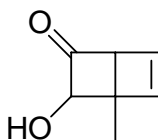
(1-10) Are True or False.

- 1) The Periodic Table has the elements arranged in the order they were discovered
- 2) All  $\sigma$  bonds are covalent bonds
- 3) A  $\pi$  bond is typically stronger than a  $\sigma$  bond
- 4) Carbon is more electronegative than fluorine
- 5) For substituted cyclohexanes, the bulkiest substituent prefers to go axial to minimize steric interactions
- 6) The electron configuration of Bromine is  $1s^2 2s^2 2p^1$
- 7) The weakest bond in ethane is the carbon-carbon bond
- 8)  $sp^2$  hybrid orbitals give rise to bond angles of  $120^\circ$
- 9) A triple bond has one  $\pi$  and two  $\sigma$  bonds
- 10) Pentane has zero ring strain

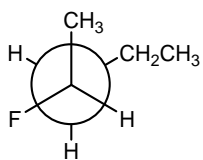
11-13) Draw Lewis structures (lines for bonds, dots for lone pairs of electrons) for:

11)  $BH_3$

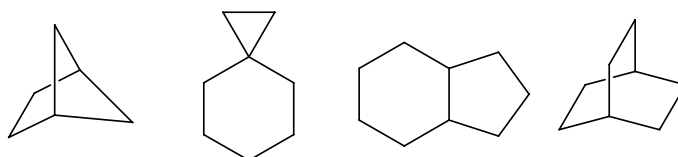
12)



13)

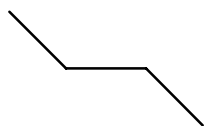


14) Circle the spirocyclic compound.

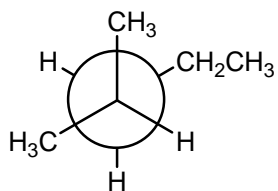


15-16) Name these compounds using IUPAC nomenclature.

15)



16)



17-20) Circle the more stable species in these pairs:

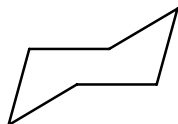
17)



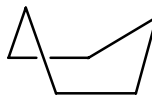
or



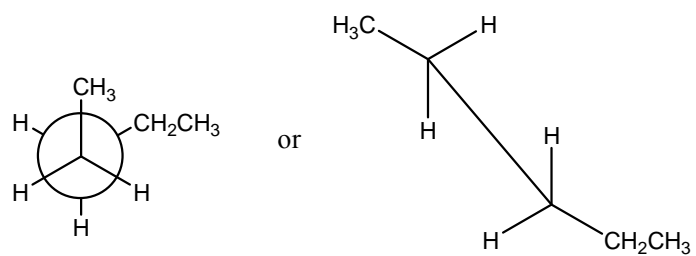
18)



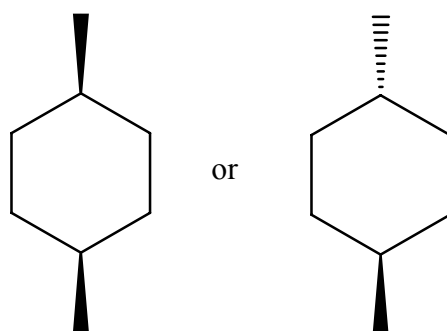
or



19)



20)



*\*BONUS QUESTION for 1 extra point\**

What two components contribute to the phenomena of ring strain?

Name SUE AGESTINKS

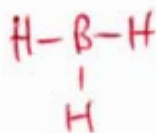
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(1-10) Are True or False.

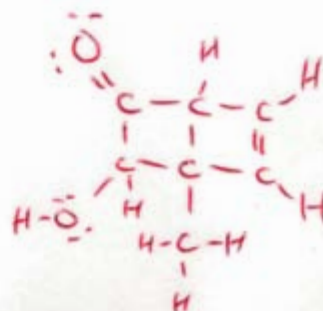
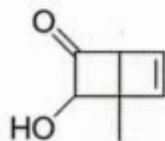
- 1) The Periodic Table has the elements arranged in the order they were discovered F
- 2) All  $\sigma$  bonds are covalent bonds T
- 3) A  $\pi$  bond is typically stronger than a  $\sigma$  bond F
- 4) Carbon is more electronegative than fluorine F
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11-13) Draw Lewis structures (lines for bonds, dots for lone pairs of electrons) for:

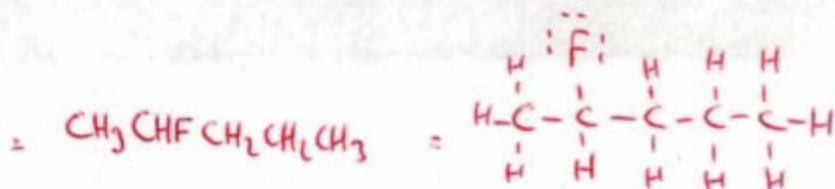
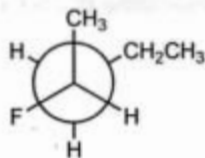
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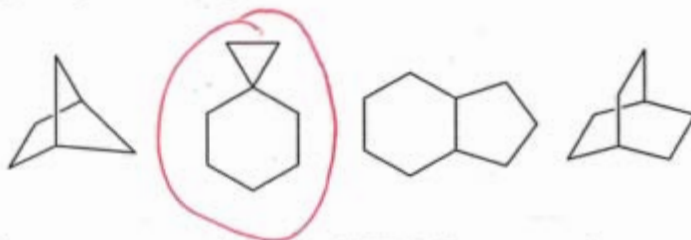
12)



13)

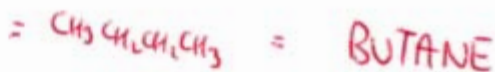


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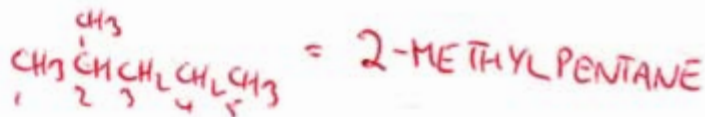
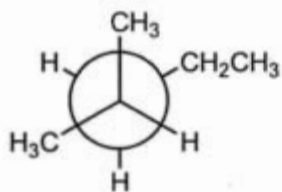


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17-20) Circle the more stable species in these pairs:

17)



or



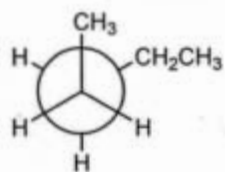
18)



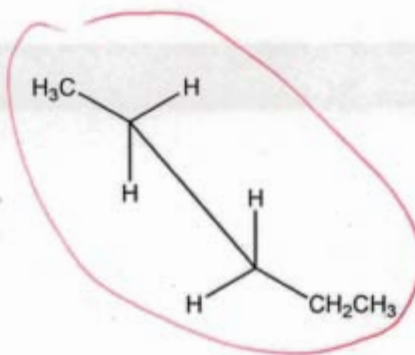
or



19)



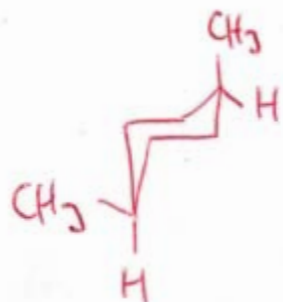
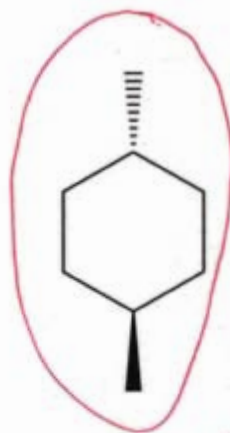
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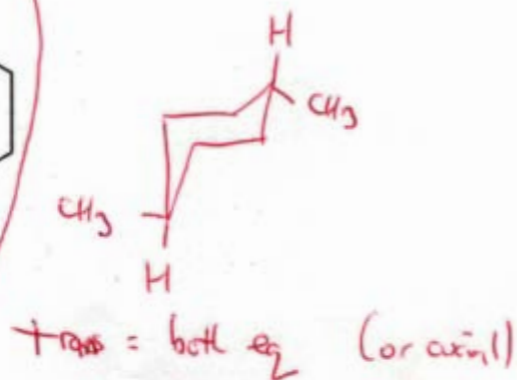
20)



or



CIS = 1 ax & 1 eq



trans = both eq (or axial)

**\*BONUS QUESTION for 1 extra point\***

What two components contribute to the phenomena of ring strain?

Angle strain & Torsional Strain