

Name: _____

date: _____ period: _____

ch. ⁶ Lewis structure, vsepr; molecular polarity

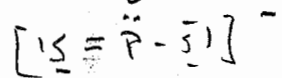
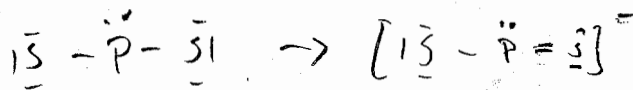
test 40 points

ngss chemistry

1. Sketch the Lewis structure(s) of _____ (hypothetical chemical ? [10 points])

a. PS_2^-

$$\begin{array}{r} P: 1 \cdot 5 = 5 \\ S: 2 \cdot 6 = 12 \\ \hline 17 \\ + 1 \text{ charge} \\ \hline 18 \\ - 4 \text{ bond} \\ \hline 14 \\ - 12 \\ \hline 2 \end{array}$$



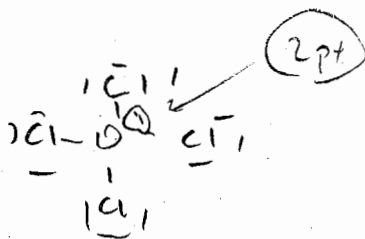
charge & bracket 4 pt

2 pt

2

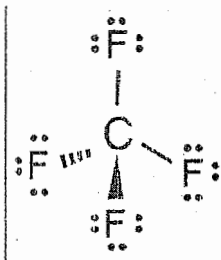
b. OCl_4

$$\begin{array}{r} O: 1 \cdot 6 = 6 \\ Cl: 4 \cdot 7 = 28 \\ \hline 34 \\ - 8 \text{ bond} \\ \hline 26 \\ - 24 \\ \hline 2 \end{array}$$



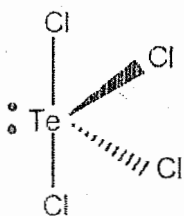
2. Is _____ a polar or nonpolar compound? basis / rationale? [10 points]

a.



nonpolar b/c Σ bond dipole = 0

b.

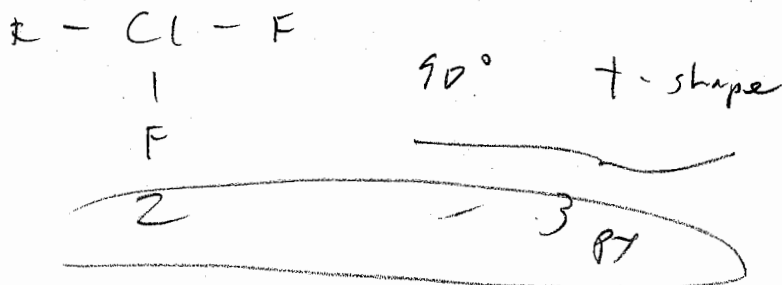
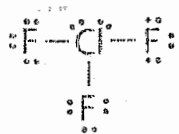


polar b/c Σ bond dipole \neq 0

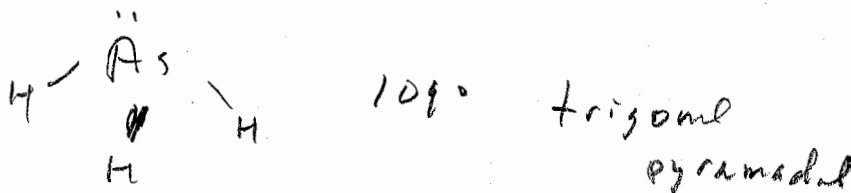
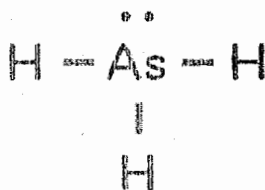
2+3 pts

3. Sketch the shape of ___; include bond(s) and the name of the shape of the molecule. [15 points]

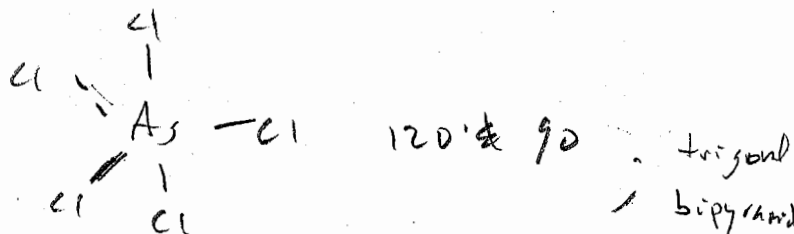
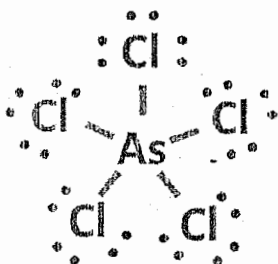
a.



b.



c.



4. What is the basis / rationale of VSEPR? [5 points]

2. molecules shape

3. where maximize distance between bonding & nonbonding e⁻ pair on central atom

or

minimize repulsion between ...