SCH4UP
Structures + Properties of Matter

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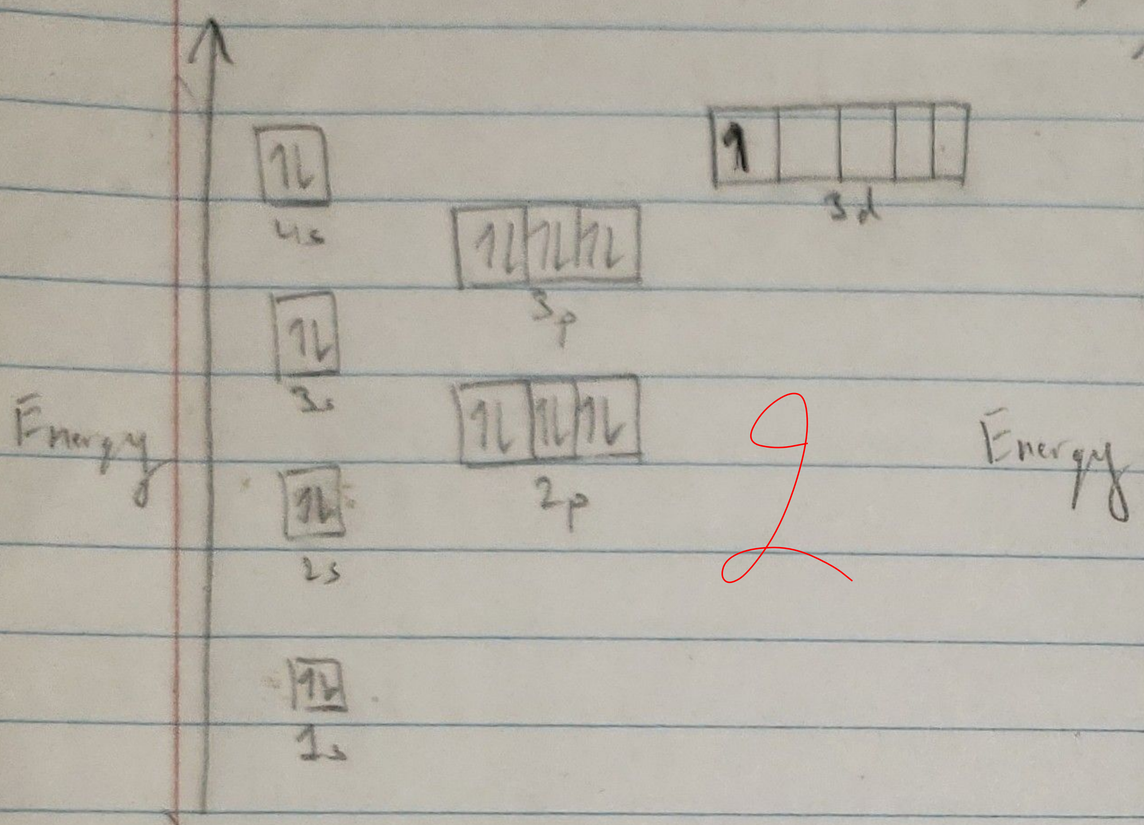
1. a)

e^-	n	l	m_l	m_s
1	3	2	-2	$+\frac{1}{2}$
2	4	∅	∅	$-\frac{1}{2}$

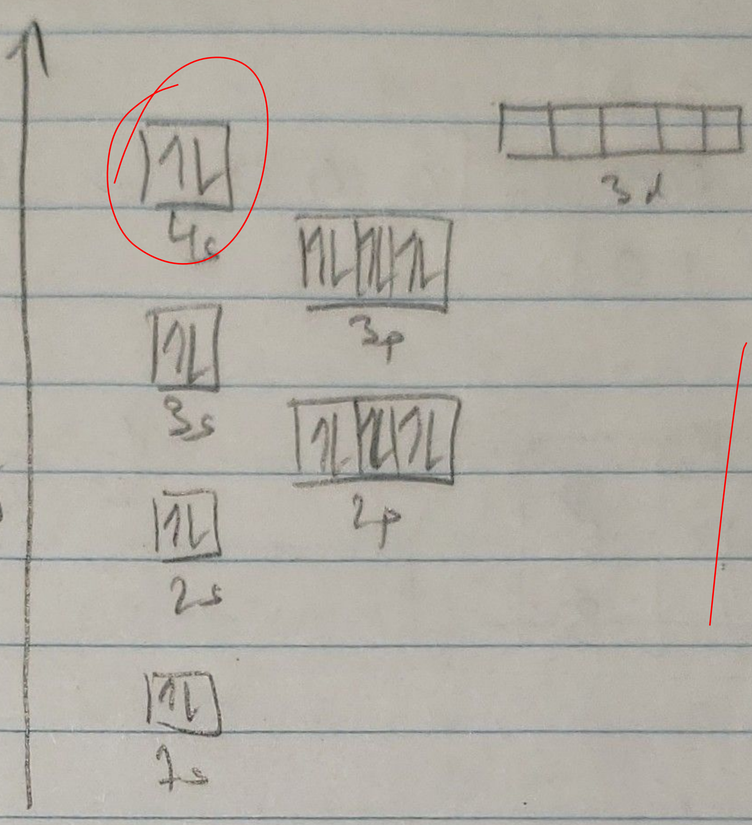
4

b)



2

c)



29/30

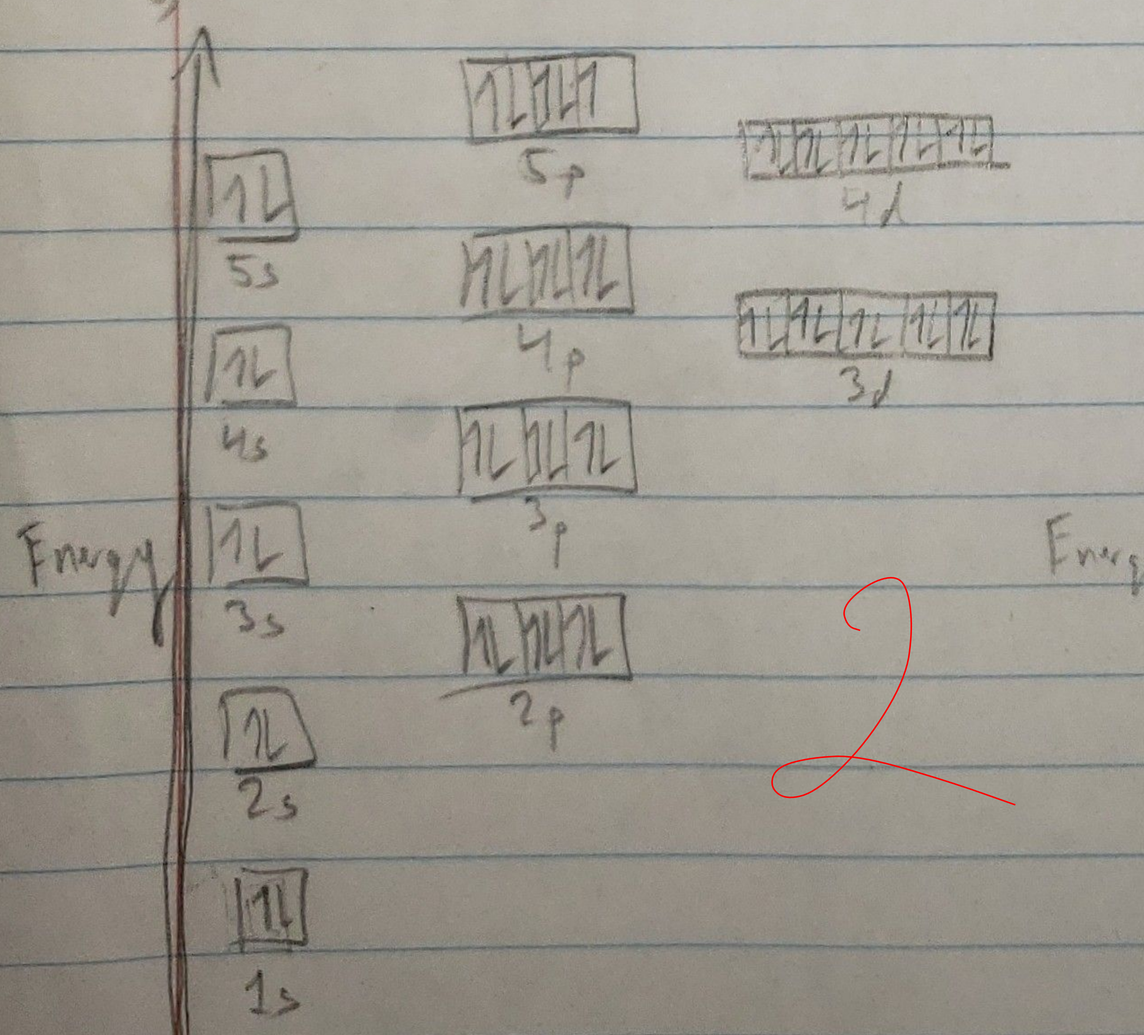
1

2. a)

e^-	n	l	m_l	m_s
1	5	1	∅	$-\frac{1}{2}$
2	5	1	-1	$-\frac{1}{2}$
3	5	1	1	$+\frac{1}{2}$

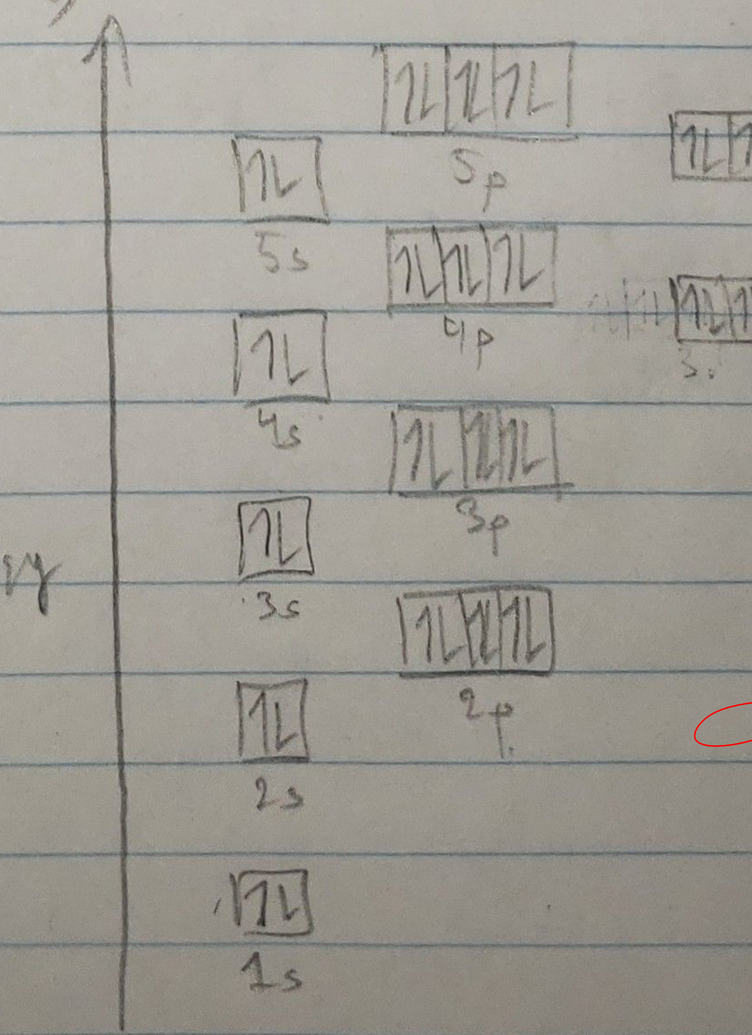
6

b)



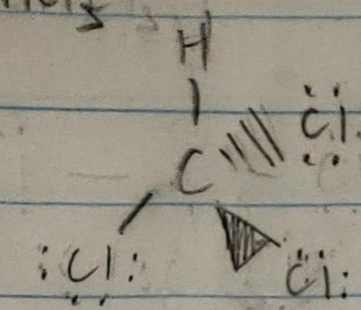
2

c)



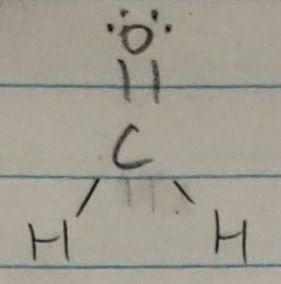
2

3. a) $CHCl_3$



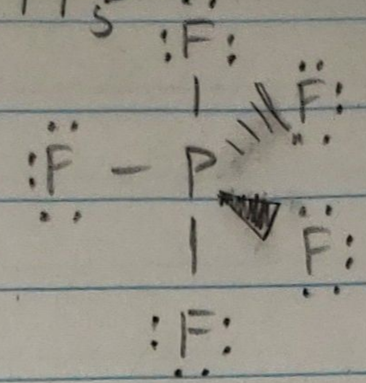
Hybridization: sp^3

b) H_2CO



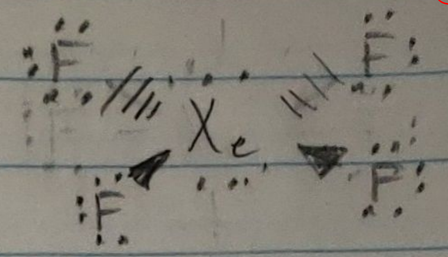
Hybridization: sp^2

c) PF_5



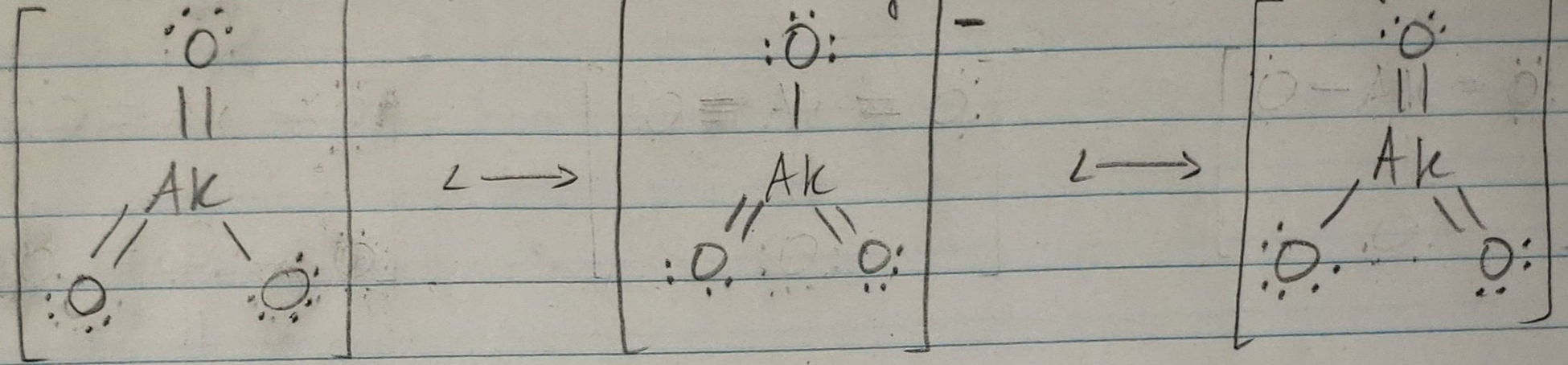
Hybridization: dsp^3

d) XeF_4



Hybridization: d^2sp^3

4.



$FC_{Ak} = 5 - 5 - 0 = 0$

$FC_O = 6 - 4 - 2 = 0$ (Double-bonded oxygen)

$FC_O = 6 - 6 - 1 = -1$ (Single-bonded oxygen)

All structures have the same formal charge. Any of the three can be the correct structure