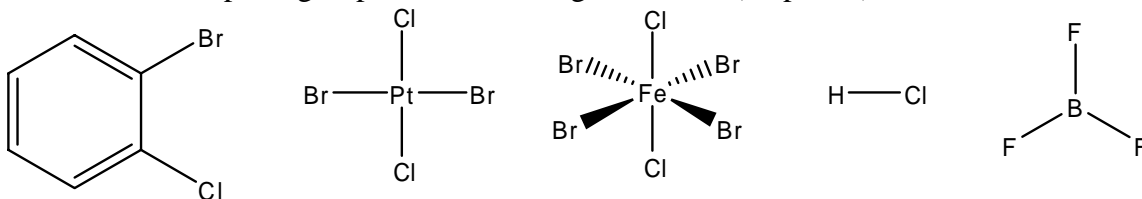


Chem 4434 Exam 2

This is a closed book exam (100 points, 25%)

Good luck!!!

1. Give an example of oxoacid (5 points)
2. Explain briefly, why fluorosulfuric acid $[\text{O}_2\text{SF}(\text{OH})]$ is stronger than sulfuric acid (5 points)
3. $\text{Fe}(\text{CO})_5$ has 2 signals in the IR spectrum and only one signal in ^{13}C NMR at room temperature. Explain briefly why. (5 points)
4. Determine the point group of the following molecules (35 points)



5. Consider the PtCl_2Br_2 molecule from question 4. What are the symmetry species spanned by the displacement of the atoms? What are the symmetries of vibrations in this molecule? Which are IR active? Which are Raman active? (50 points)