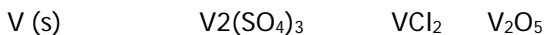


Chem. 103 Practice problems for Ch. 18-1 through 18-4

1. What is the oxidation number of vanadium, V, in each of the following?



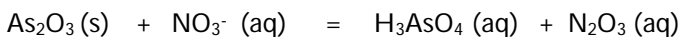
2. A voltaic cell operating at 298K uses the reaction involving Fe<sup>2+</sup>, Fe<sup>3+</sup>, O<sub>2</sub>, and H<sub>2</sub>O under acidic conditions as redox reagents and products. Given the following values of standard reduction potentials answer the questions below:



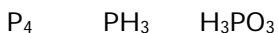
2.1 What is the spontaneous cell reaction? Explain your choice.

2.2 What is the standard cell potential?

3. Balance the following redox reaction in acidic solution by the half-reaction method:



4. 1 Determine the oxidation number of phosphorus, P, in the following:



4.2 In basic solution P<sub>4</sub> reacts to give a mixture of PH<sub>3</sub> and H<sub>3</sub>PO<sub>3</sub>; balance this reaction by the half-reaction method.

5. Calculate the standard potentials for spontaneous reactions in the following systems in acidic solution; you will need E<sub>o</sub> values from Appendix F.

