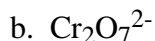


Quiz 6 –Redox AP Chemistry

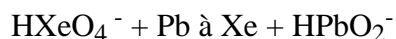
This quiz must be completed and brought to my room before the start of first period on Tuesday. Failure to do so will incur a 25% penalty unless there is a legal reason.

You must show all work in order to receive credit.

1. Identify the oxidation number for the underlined element in each species.

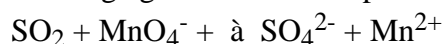


2. Balance the following redox reaction that takes place in a basic solution.



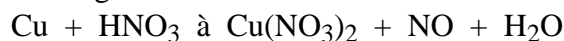
3. Write the balanced molecular, complete ionic *and* net ionic equations for the following reaction.
Solid ammonium carbonate is dissolved in an aqueous solution of copper(II) chloride.

4. The SO_2 present in air is mainly responsible for the acid rain phenomenon. Its concentration can be determined by titrating against a standard permanganate solution as follows:

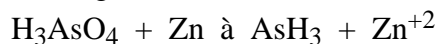


- a. Balance this redox reaction in an acidified solution.
b. Calculate the number of grams of SO_2 in a sample of air if 8.37mL of 0.00900M KMnO_4 solution are required for the titration.

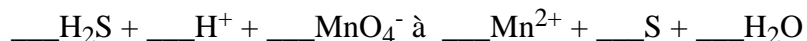
5. Balance the following redox reaction.



6. Balance the following redox reaction carried out in acid solution.



7. Balance the following equation:



8. The police often use a device called a breath analyzer to test drivers suspected of being drunk. The chemical basis of this device is a redox reaction. A sample of the driver's breath is drawn into the breath analyzer, where it is treated with an acidic solution of potassium dichromate. The alcohol (ethanol) in the breath is converted to acetic acid and the chromium VI ion (orange-yellow) is oxidized to the chromium III ion (green). The drivers blood alcohol level can be determined by measuring the degree of the color change using a colorimeter (spectrophotometer) built into the device.

Balance the reaction that occurs in this device according to the following equation:

(Remember the charge difference is per atom)

