

CHE 301 EXAM 3 Name _____

Actual questions are not exactly the same!

1. Calculate the conditional formation constant K_f' for the formation of an EDTA complex with copper(II) at a pH of 5.00, if $\log K_f = 18.80$. From your result, is it possible to titrate Cu(II) with EDTA at this pH?

2.-3. Use your textbook to select the best indicator for the titration of iron(II) with thallium(III),

and for the titration of ascorbic acid with I_2 .

4. Convert transmittance of 0.123 (12.3%) into absorbance.

5. Molar absorptivity for a XXXX is **1234** at 567 nm.

Calculate the absorbance of a 3.00×10^{-5} M solution of XXXX in a 10 cm cell.

6. XXX similar to above

7. A solution absorbs light in visible area. The spectrum has a maximum at 423 nm. What is the color of this solution?

8. A light beam has wavelength of 650 nm. What color you expect to see?

10. A 1.0000-g sample of copper ore was digested and treated with an excess of potassium iodide. The resulting iodine was titrated with 0.0100 M sodium thiosulfate solution using starch as an indicator. 25.0 mL of sodium thiosulfate solution were used for titration.

Calculate % of Cu in the ore.

9.. To determine the amount of **potassium** in a water sample, the emission measurements of the following measurements were made:

#1 pure deionized water

I = 0

#2 10 mL of water sample was diluted to 50 mL

I = 50

#3 10 mL of water sample + 2.0 mL of K^+ solution (1.0 $\mu\text{g/mL}$) was diluted to 50 mL

I = 100

Calculate the concentration of **potassium** in the water sample.