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Chemistry_Questions_0003

1. Four determinations of the molarity of acetic acid solution via titration gave the following results: 0.301M, 0.291M, 0.302M, 0.348M

The correctly reported average molarity and standard deviation for these value, respectively shoube (rejectability must be shown if it occurs: A) .298 + or - .010M B) 0.298 + or - .006M

C) .311+ or- .025M D) .311 + or - .044M or E) none of the above,

3. Experimentally a student determined the density of an unknown metal immersing a 23.3872g irregularly shaped piece in a graduated cylinder containing 11.20mL of water. After the metal piece was added, the volume of water and metal 17.62mL. What should the student report as the density of metal. A) 2.05g/cm³ B) 1.33g/cm³ C) 3.76g/cm³ D) .806g/cm³ or E) none of the above I have no idea on this one.

4. Consider the equilibrium experiment reaction: $\text{Fe}^{3+} + \text{HSCN} \rightleftharpoons \text{Fe}(\text{SCN})_2 + \text{H}^+$. In one trial the experimental concentration of the hydrogen ion concentration was a constant .500M and the thiocyanatoiron(III) ion ws determined to be 0.000420M. Initially 10.0mL of 0.00150M ferric ion solution were mixed with 5.00mL of 0.00120M thiocyanic acid and 10.00 mL of 0.500M nitric acid solution to form the trial's reactant mixture.

A) What was the initial concentration of the reacants after mixing?

[Fe³⁺] = _____M [HSCN] = _____M

B) What were the equilibrium concentrations?

[Fe³⁺] = _____M [HSCN] = _____M

C) What is the value for the equilibrium constant, Keq? Keq = _____

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