Solubility Written Response:

1.

A solution is prepared by mixing equal moles of $Ba(NO_3)_2$, K_2SO_4 and BaS and precipitation occurs. Identify the precipitate(s) and write the net ionic equation(s) for the reaction(s). **(3 marks)**

Precipitate(s):

Net Ionic Equation(s):

2.

Calculate the mass of solid $AgNO_3$ that can be added to 2.0 L of a 0.10 M K_2CrO_4 solution in order to just start precipitation. **(4 marks)**

3.

a) How would a saturated solution be prepared at room temperature? **(1 mark)**

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b) Write a chemical equation to illustrate the equilibrium that exists in a saturated solution of $Be_3(PO_4)_2$. **(2 marks)**

4.

(4 marks)

Consider the equilibrium for a saturated solution of PbI_2:

$$PbI_2(s) \rightleftarrows Pb^{2+}(aq) + 2I^-(aq)$$

What is the maximum $[Ag^+]$ that can exist in a saturated solution of PbI_2 without causing a precipitate to form?