

**Solubility Written Response:**

1.

A solution is prepared by mixing equal moles of  $\text{Ba}(\text{NO}_3)_2$ ,  $\text{K}_2\text{SO}_4$  and  $\text{BaS}$  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  $\text{AgNO}_3$  that can be added to 2.0L of a 0.10M  $\text{K}_2\text{CrO}_4$  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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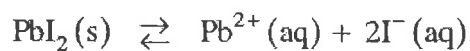
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- b) Write a chemical equation to illustrate the equilibrium that exists in a saturated solution of  $\text{Be}_3(\text{PO}_4)_2$ . (2 marks)

4.

(4 marks)

Consider the equilibrium for a saturated solution of  $\text{PbI}_2$ :



What is the maximum  $[\text{Ag}^+]$  that can exist in a saturated solution of  $\text{PbI}_2$  without causing a precipitate to form?