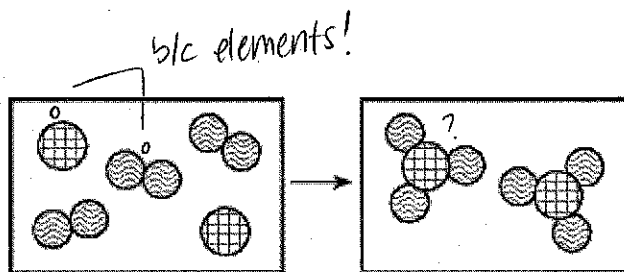


### Don't Overreact: More Reactions Practice!

Part I: Complete the following chart. (Balance the reactions if you want more practice!)

Reaction	Type of Reaction A/B, PPT, Redox?
1. $\overset{0}{\text{Ca}}(\text{s}) + 2\overset{+1}{\text{H}}\overset{-2}{\text{O}}(\text{l}) \rightarrow \overset{+2}{\text{Ca}}(\overset{-2}{\text{O}}\overset{+1}{\text{H}})_2(\text{aq}) + \overset{0}{\text{H}_2}(\text{g})$	Redox
2. $2\text{NH}_4\text{F}(\text{aq}) + \text{Sr}(\text{ClO}_3)_2 \rightarrow 2\text{NH}_4\text{ClO}_3(\text{aq}) + \text{SrF}_2(\text{aq})$	n/a
3. $\text{HNO}_3(\text{aq}) + \text{LiOH}(\text{aq}) \rightarrow \text{LiNO}_3(\text{aq}) + \text{H}_2\text{O}(\text{l})$	A/B
4. $2\text{LiI}(\text{aq}) + \text{Pb}(\text{NO}_3)_2(\text{aq}) \rightarrow 2\text{LiNO}_3(\text{aq}) + \text{PbI}_2(\text{s})$	PPT
5. $2\overset{-14}{\text{C}}\overset{+1}{\text{H}}_{14}(\text{g}) + 19\overset{0}{\text{O}}_2(\text{g}) \rightarrow 14\overset{+1}{\text{H}}\overset{-2}{\text{O}}(\text{l}) + 12\overset{+4}{\text{C}}\overset{-2}{\text{O}}_2(\text{g})$	Redox

Part II: Multiple Choice Practice



Synthesis → redox

1. The diagram above best represents which type of reaction?

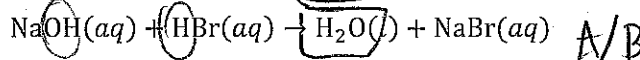
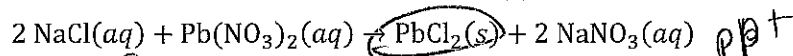
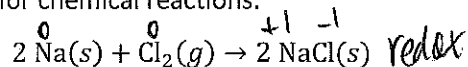
- a. Acid/base                      c. Precipitation  
 b. Oxidation/reduction        d. Decomposition

2. If we dissolve 25 grams of salt in 251 grams of water, what is the mass of the resulting solution?

- a. 251 g                       b. 276 g                      c. 226 g

$$25 + 251$$

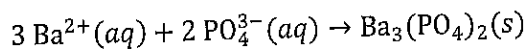
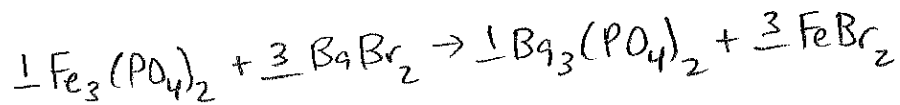
3. Consider the following three equations for chemical reactions:



These are examples of:

- a. three redox reactions         c. a redox reaction, a precipitation reaction, and an acid-base reaction  
 b. three acid-base reactions    d. a neutralization reaction, then two precipitation reactions

4. Given the net ionic equation



how many grams of iron (II) phosphate must be present to react with  $2.0 \times 10^2$  grams of barium bromide?

(MW  $\text{Fe}_3(\text{PO}_4)_2 = 357 \text{ g/mol}$ , MW  $\text{BaBr}_2 = 297 \text{ g/mol}$ )

**A**

$$200 \text{g BaBr}_2 \times \frac{1 \text{ mol BaBr}_2}{297 \text{g BaBr}_2} \times \frac{1 \text{ mol Fe}_3(\text{PO}_4)_2}{3 \text{ mol BaBr}_2} \times \frac{357 \text{g Fe}_3(\text{PO}_4)_2}{1 \text{ mol Fe}_3(\text{PO}_4)_2}$$

**B**

$$200 \text{g BaBr}_2 \times \frac{1 \text{ mol BaBr}_2}{297 \text{g BaBr}_2} \times \frac{2 \text{ mol Fe}_3(\text{PO}_4)_2}{3 \text{ mol BaBr}_2} \times \frac{357 \text{g Fe}_3(\text{PO}_4)_2}{1 \text{ mol Fe}_3(\text{PO}_4)_2}$$

**C**

$$200 \text{g BaBr}_2 \times \frac{1 \text{ mol BaBr}_2}{297 \text{g BaBr}_2} \times \frac{3 \text{ mol Fe}_3(\text{PO}_4)_2}{1 \text{ mol BaBr}_2} \times \frac{357 \text{g Fe}_3(\text{PO}_4)_2}{1 \text{ mol Fe}_3(\text{PO}_4)_2}$$

**D**

$$200 \text{g BaBr}_2 \times \frac{1 \text{ mol BaBr}_2}{297 \text{g BaBr}_2} \times \frac{3 \text{ mol Fe}_3(\text{PO}_4)_2}{2 \text{ mol BaBr}_2} \times \frac{357 \text{g Fe}_3(\text{PO}_4)_2}{1 \text{ mol Fe}_3(\text{PO}_4)_2}$$

5. If solutions containing equimolar amounts of  $\text{AgNO}_3$  and  $\text{KCl}$  are mixed, what is the identity of the spectator ions?

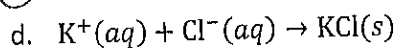
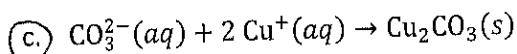
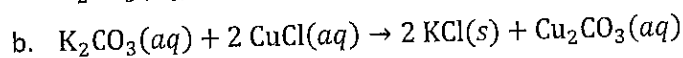
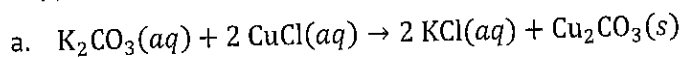
a.  $\text{Ag}^+$ ,  $\text{NO}_3^-$ ,  $\text{K}^+$ , and  $\text{Cl}^-$

c.  $\text{Ag}^+$  and  $\text{K}^+$

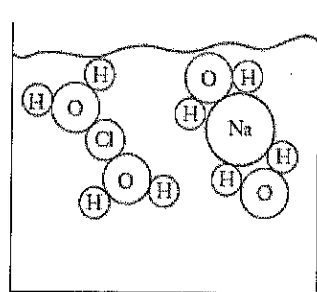
b.  $\text{Ag}^+$  and  $\text{Cl}^-$

**d.**  $\text{NO}_3^-$  and  $\text{K}^+$

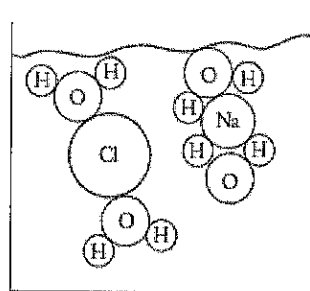
6. Choose the correct net ionic equation representing the reaction that occurs when solutions of potassium carbonate and copper (I) chloride are mixed.



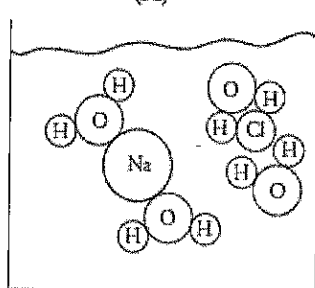
7. Which of the following diagrams best represents what is happening on a molecular level when NaCl dissolves in water?



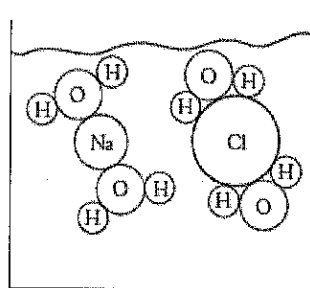
(A)



(C)



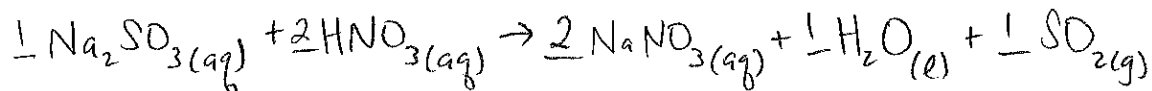
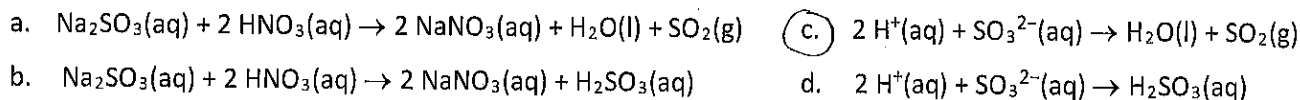
(B)



(D)

Use this information to answer #8-9: When sodium sulfite(aq) is added to nitric acid, aqueous sodium nitrate and two other products are formed.

8. What is the balanced net-ionic equation for this reaction?



9. If 0.62 g of sodium sulfite is added to excess nitric acid, how many mL of gas will be evolved at 625 mmHg and 27°C? (The molar mass of sodium sulfite is 126 g/mol).

- a. 0.018 mL    b. 0.20 mL    c. 13 mL    d. 150 mL

not STP!

300 K

$$0.62 \text{ g Na}_2\text{SO}_3 \times \frac{1 \text{ mol}}{126 \text{ g}} \times \frac{1 \text{ SO}_2}{1 \text{ Na}_2\text{SO}_3} = \frac{0.62}{126} = \frac{62}{126} \times 10^{-2} \approx 0.5 \times 10^{-2} = 5 \times 10^{-3} \text{ mol SO}_2$$

$$V = \frac{nRT}{P} = \frac{(5 \text{ mmol})(62.36 \frac{\text{L}\cdot\text{mmHg}}{\text{mol}\cdot\text{K}})(300 \text{ K})}{625 \text{ mmHg}}$$

$$= \frac{(5)(62)(300)}{625} \approx 150 \text{ mL}$$