Practice Problems Section 4.3

1) Which one of the following is a diprotic acid?

A) nitric acid

B) chloric acid

C) phosphoric acid

D) hydrofluoric acid

E) sulfuric acid

2) Which one of the following is a triprotic acid?

A) nitric acid

B) chloric acid

C) phosphoric acid

D) hydrofluoric acid

E) sulfuric acid

3) Which one of the following solutions will have the greatest concentration of hydroxide ions?

A) 0.100 M rubidium hydroxide

B) 0.100 M magnesium hydroxide

C) 0.100 M ammonia

D) 0.100 M beryllium hydroxide

E) 0.100 M hydrochloric acid

4) Which one of the following is a weak acid?

A) HNO3

B) HCl

C) HI

D) HF

E) HClO4

5) Which hydroxides are weak bases?

A) KOH, Ba(OH)2

B) KOH, Ba(OH)2, Sr(OH)2, NaOH

C) KOH, NaOH

D) KOH, Ba(OH)2, NaOH

E) None of these is a weak base

6) The balanced reaction between aqueous potassium hydroxide and aqueous acetic acid is \_\_\_\_\_\_\_\_\_\_.

A) KOH (aq) + HC2H3O2 (aq) 🡪 OH- (aq) + HC2H3O2(aq) + K (s)

B) KOH (aq) + HC2H3O2 (aq) 🡪 H2O (l) + KC2H3O2(aq)

C) KOH (aq) + HC2H3O2 (aq) 🡪 HC2H3O3 (aq)+ K (s)

D) KOH (aq) + HC2H3O2 (aq) 🡪 HC2H3O3 (aq)+ H2 (g)

E) KOH (aq) + HC2H3O2 (aq) 🡪 H2KC2H3O(aq)+ O2 (g)

7) The balanced reaction between aqueous nitric acid and aqueous strontium hydroxide is \_\_\_\_\_\_\_\_\_\_.

A) HNO3 (aq) + Sr(OH)2 (aq) 🡪 Sr(NO3)2 (aq) + H2 (g)

B) HNO3 (aq) + Sr(OH)2 (aq) 🡪 Sr(NO3)2 (aq) + H2O (l)

C) HNO3 (aq) + SrOH (aq) 🡪 SrNO3 (aq) + H2O (l)

D) 2HNO3 (aq) + Sr(OH)2 (aq) 🡪 Sr(NO3)2 (aq) + 2H2O (l)

E) 2HNO3 (aq) + Sr(OH)2 (aq) 🡪 Sr(NO3)2 (aq) + 2H2 (g)

8) When H2SO4 is neutralized by NaOH in aqueous solution, the net ionic equation is \_\_\_\_\_\_\_\_\_\_.

A) SO42- (aq) + 2Na+ (aq) 🡪 Na2SO4 (aq)

B) SO42- (aq) + 2Na+ (aq) 🡪 Na2SO4 (s)

C) H+ (aq) + OH- (aq) 🡪 H2O (l)

D) H2SO4 (aq) + 2OH- (aq) 🡪 2H2O (l) + SO42- (aq)

E) 2H+ (aq) + 2NaOH (aq) 🡪 2H2O (l) + 2Na+ (aq)