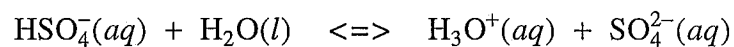
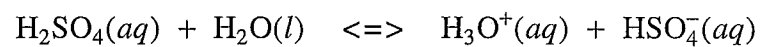


**Polyprotic Acids and Bases**

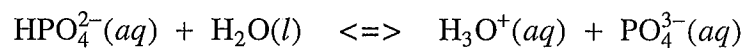
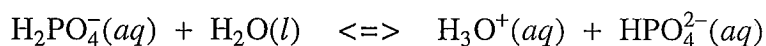
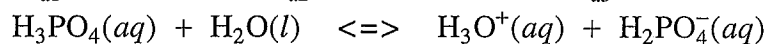
polyprotic acid - capable of donating more than one proton

polyprotic base - capable of accepting more than one proton

EX 18. What is the concentration of **all** species present in a 1.00 M solution of sulfuric acid acid where  $K_a = 1.2 \times 10^{-2}$ ?



EX 19. What is the pH and concentration of **all** species present in a 5.00 M solution of phosphoric acid where  $K_{a1} = 7.52 \times 10^{-3}$ ,  $K_{a2} = 6.23 \times 10^{-8}$ , and  $K_{a3} = 2.2 \times 10^{-13}$ ?



## LEWIS ACIDS/BASES

Chapter 8

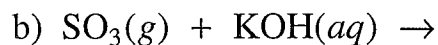
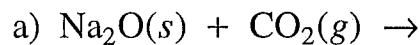
### Lewis Concept of Acids and Bases

Lewis acid

Lewis base

coordinate covalent bond

examples:



hydrolysis of metal ions