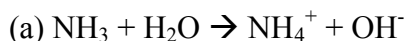


Week 9 Worksheet: Chapter 10 Acids and Bases

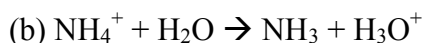
I. Identifying acid/base theories. For each molecule or ion in the table, identify whether it can act as an acid or a base and put a checkmark under each theory or theories that describe it.

Molecule/Ion	Acid or Base	Arrhenius	Bronsted-Lowry	Lewis
Br ⁻				
CN ⁻				
H ₂ CO ₃				
NH ₃				
HNO ₂				
Ba(OH) ₂				
HCl				
CaCO ₃				
AlCl ₃				
Cl ₂				
Cl ⁻				
KOH				
IO ₃ ⁻				
CH ₃ COOH				
HNO ₂				
PO ₄ ³⁻				

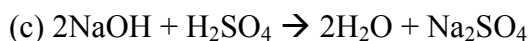
II. Conjugate Acids and Bases. In each reaction, identify the acid, base, conjugate acid, and conjugate base. Then, write which acid/base theory or theories describe the reaction.



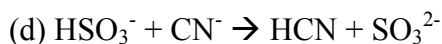
Theory: _____



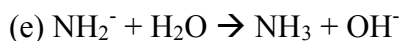
Theory: _____



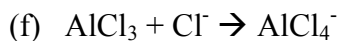
Theory: _____



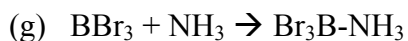
Theory: _____



Theory: _____



Theory: _____

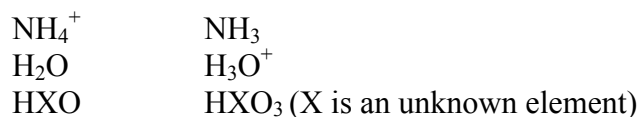


Theory: _____

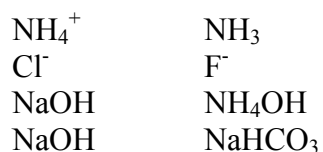
III. Acid/Base Strength

(a) What property do all strong acids and strong bases have in common? Write a reaction for HCl and water to illustrate your explanation.

(b) Circle the stronger acid in each pair:



(c) Circle the weaker base in each pair:



IV. Ternary Acids/Bases

Explain the order of increasing or decreasing acid strength and conjugate base strength for the following groups:

(a) H_2SO_3 , H_2SO_4

(b) HNO_2 , HNO_3