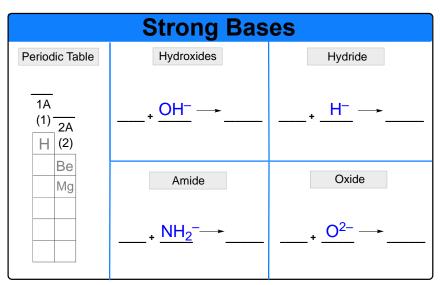
## **CONCEPT: BASES**

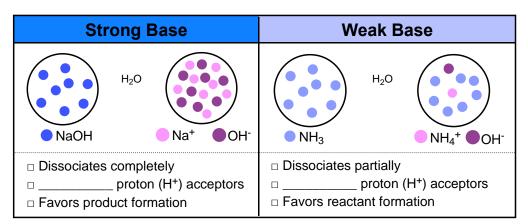
## **Strong Bases**

- When certain Group \_\_\_\_\_ and \_\_\_\_ metals combine with any of the following anions they form Strong Bases.
  - □ The anions include: \_\_\_\_\_ (hydroxide), \_\_\_\_\_ (hydride), \_\_\_\_ (amide), and \_\_\_\_ (oxide).



**EXAMPLE**: Which of the following represents a strong base?

- a) Be(OH)<sub>2</sub>
- b) NaO<sub>2</sub>
- c) LiNH<sub>2</sub>
- d) Mg(OH)<sub>2</sub>
- e) KIO
- Following acids, Strong Bases are \_\_\_\_\_ electrolytes and Weak Bases are \_\_\_\_ electrolytes.
  - □ Strong Bases dissociate (ionize) \_\_\_\_\_ in water and are \_\_\_\_\_ proton acceptors.
  - □ Weak Bases only partially dissociate, are \_\_\_\_\_ proton acceptors, and favor \_\_\_\_\_.



**EXAMPLE**: Which of the following bases will partially dissolve when placed in water?

- a) LiOH
- b) NaNH<sub>2</sub>
- c) Al(OH)<sub>3</sub>
- d) Cs<sub>2</sub>O
- e) KOH

## **CONCEPT: BASES**

## **Amines**

• Recall, an anime is a covalent compound containing \_\_\_\_ & \_\_\_ or \_\_\_\_, \_\_\_ & \_\_\_\_.

Amines	
Neutral Amines	Positive Amines
□ Neutral Amines = Weak	□ Positive Amines = Weak
H <sub>2</sub> NNH <sub>2</sub> C <sub>3</sub> H <sub>7</sub> NH <sub>2</sub> C <sub>5</sub> H <sub>5</sub> N	$CH_3NH_3^+$ $NH_4^+$ $(C_2H_5)_3NH^+$

**EXAMPLE**: Identify the amine that will weakly accept a proton (H+) when in the presence of an acid.

- a)  $H_2NNH_3^+$
- b) (CH<sub>3</sub>)<sub>2</sub>NH
- c) CH<sub>3</sub>SH
- d) CH<sub>3</sub>NH<sub>3</sub>+
- e) CH<sub>3</sub>CH<sub>2</sub>CH<sub>3</sub>

PRACTICE: Which of the following bases would more greatly favor the product side of a chemical reaction?

- a) BeH2
- b) H<sub>2</sub>Se
- c) SrH<sub>2</sub>
- d) Pb(OH)<sub>4</sub>
- e) HF

PRACTICE: Which of the following compounds would be found as mostly molecules when placed into water?

- I. Be(OH)<sub>2</sub>
- II. HNO<sub>3</sub>
- III. LiOH
- IV. (CH<sub>3</sub>)<sub>2</sub>NH
- V. CaO

- a) I, IV, V
- b) I only
- c) I and IV
- d) IV only
- e) None of the above