Name: _____

Date: _____

[8 pt] 1. Write a balanced net ionic equation for each of the following ions with water. Is the ion acting as an acid or base in the reaction?

(a)
$$CH_3NH_3^+(aq) + H_2O(l) \longrightarrow$$

(b)
$$\operatorname{Cr}(H_2O)_6^{+3}(aq) + H_2O(l) \longrightarrow$$

(c)
$$CH_3CO_2^-(aq) + H_2O(l) \longrightarrow$$

(d)
$$PO_4^{-3}(aq) + H_2O(l) \longrightarrow$$

[8 pt] 2. Classify each of the following salt solutions as: (A)cidic, (B)asic, or (N)eutral. Show reactions supporting your answers.

- (a) $Fe(NO_3)_3$
- (b) $Ba(NO_3)_2$
- (c) NaClO
- (d) NH₄I

[5 pt] 3. Define the term amphoteric. Write \mathbf{TWO} reactions for the $\mathrm{HSO_3}^-$ anion reacting with water showing its amphoteric nature.

