CONCEPT: AMPHOTERIC SPECIES

- **Amphoteric (Amphiprotic):** A substance that can act as an acid or base based on its _____.
  - □ **Acid**: a substance that _____ an H^+ (proton) when dissolved within a solvent.
  - □ **Base:** a substance that _____ an H^+ (proton) when dissolved within a solvent.
  - □ Many amphoteric species possess an H^+ at the beginning of the compound and a _____ charge at the end.
    - **Exception:** _____ is a prime example of an amphoteric species.

Amphoteric Species

Water

$F^-(aq) + H_2O(l) \rightarrow$ _____ (aq) + _____ (aq)
(Acid)

$HCl(aq) + H_2O(l) \rightarrow$ _____ (aq) + _____ (aq)
(Base)

Others

HS^- HCO_3^- HPO_4^{2-}

EXAMPLE: Which of the following compounds is amphoteric when placed in water?

a) PO_3^{3-} b) HIO c) HSO_3^- d) HNO_3 e) NH_3

PRACTICE: Which of the following species is amphiprotic within an aqueous solvent?

a) Br^- b) $HC_2H_3O_2$ c) SO_4^{2-} d) HSe^- e) H_3O^+