

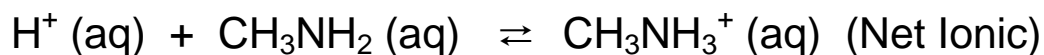
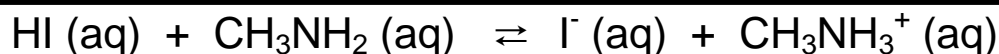
Complete and balance the following reactions. Then, write the net ionic reaction and state whether the solution will be acidic basic or neutral. K_a and K_b values can be found in Tables C.2 and C.3 in the Appendix in your book.



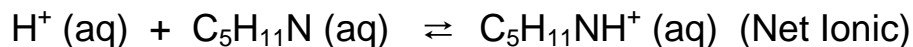
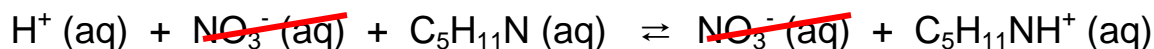
$$K_b (\text{BrO}^-) = 5.0 \times 10^{-6}$$

$$K_a (\text{N}_2\text{H}_5^+) = 1.1 \times 10^{-8}$$

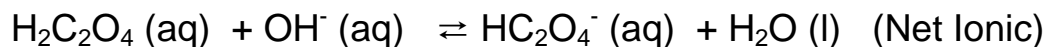
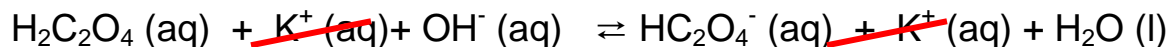
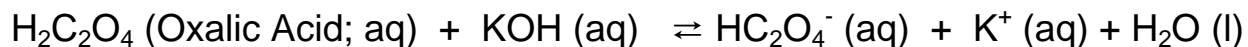
$K_b > K_a$
Solution is Basic



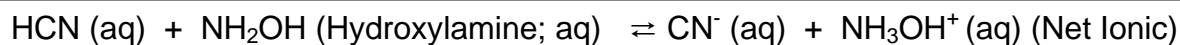
↑
**CH₃NH₃⁺ is an Acid,
Solution is Acidic**



↑
**C₅H₁₁NH⁺ is an Acid,
Solution is Acidic**



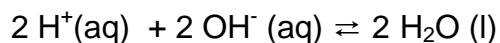
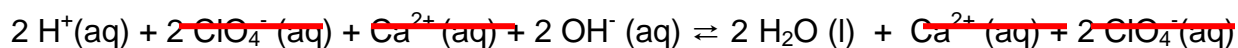
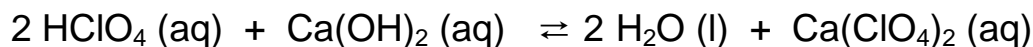
↑
**HC₂O₄⁻ is a Base,
Solution is Basic**



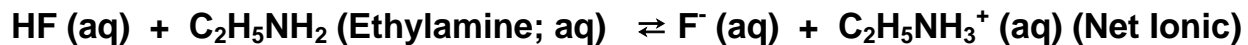
$$K_b (\text{CN}^-) = 2.0 \times 10^{-5}$$

$$K_a (\text{NH}_3\text{OH}^+) = 1.1 \times 10^{-6}$$

**$K_b > K_a$
Solution is Basic**



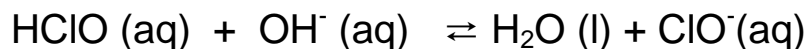
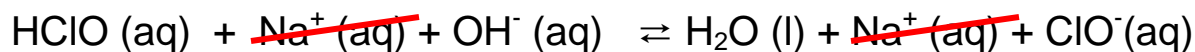
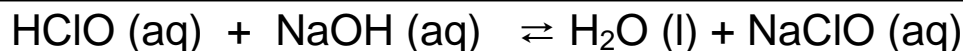
Water in solution; pH is neutral



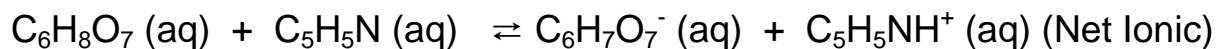
$$K_b (\text{F}^-) = 2.9 \times 10^{-11}$$

$$K_a (\text{C}_2\text{H}_5\text{NH}_3^+) = 1.6 \times 10^{-11}$$

$K_b > K_a$
Solution is Basic



↑
**ClO⁻ is a Base,
Solution is Basic**



$$K_b (\text{C}_6\text{H}_7\text{O}_7^-) = 1.4 \times 10^{-11}$$

$$K_a (\text{C}_5\text{H}_5\text{NH}^+) = 5.6 \times 10^{-6}$$

$K_a > K_b$
Solution is Acidic