

1. The K_a of HClO is 3.0×10^{-8} . What is the pH at 25°C of an aqueous solution that is 0.020 M in HClO ?
 - (a) 2.45
 - (b) 1.70
 - (c) 4.61
 - (d) 9.22
2. Which of the following possesses the greatest concentration of hydroxide ion?
 - (a) a $1 \times 10^{-3}\text{ M}$ solution of NH_4Cl
 - (b) a solution with $\text{pOH} = 12.0$
 - (c) a $1.0 \times 10^{-4}\text{ M}$ solution of HNO_3
 - (d) pure water
3. An aqueous solution of _____ will produce a basic solution.
 - (a) NH_4ClO_4
 - (b) KBr
 - (c) NaCl
 - (d) $\text{NaC}_2\text{H}_3\text{O}_2$
4. Which of the following bases is not a strong base?
 - (a) $\text{Ca}(\text{OH})_2$
 - (b) O^{2-}
 - (c) HSO_4^-
 - (d) $\text{Ba}(\text{OH})_2$
5. The pH of a 0.10 M solution of a weak base is 9.82. What is the K_b for this base?
 - (a) 2.1×10^{-4}
 - (b) 4.3×10^{-8}
 - (c) 8.8×10^{-8}
 - (d) 6.6×10^{-4}

6. Which species from the following list would be the strongest Bronsted-Lowry base?
- (a) Cl^-
 - (b) Br^-
 - (c) NO_3^-
 - (d) F^-
7. What is the pH of a 2.5 M solution of phosphoric acid (H_3PO_4)? ($K_{a1} = 7.5 \times 10^{-3}$; $K_{a2} = 6.2 \times 10^{-8}$, $K_{a3} = 4.2 \times 10^{-13}$)
- (a) 0.88
 - (b) 3.40
 - (c) 2.12
 - (d) 0.40
8. The K_a for formic acid (HCHO_2) is 1.8×10^{-4} . What is the pH of a 0.35 M solution of sodium formate (NaCHO_2)?
- (a) 5.36
 - (b) 10.71
 - (c) 8.64
 - (d) 2.10
9. Given the following table of data:

<u>Acid</u>	<u>K_a</u>
$\text{HC}_2\text{H}_3\text{O}_2$	1.8×10^{-5}
HCHO_2	1.8×10^{-4}
HClO	3.0×10^{-8}
HF	6.8×10^{-4}

Which one of the following is the strongest base?

- (a) $\text{OC}_2\text{H}_3\text{O}_2^-$
- (b) CHO_2^-
- (c) ClO^-
- (d) F^-

10. Which one of the following is the weakest acid?

