

Part I

Complete the following table. (Assume 25°C.)

	$[H^+]$	pH	pOH	$[OH^-]$	Solution (acidic, basic, or neutral)
1.	3.0×10^{-2}				
2.			6.66		
3.		11.72			
4.				1.7×10^{-6}	
5.	8×10^{-5}				
6.					neutral
7.		12.0			
8.			15.0		
9.				8.7×10^{-3}	
10.		3.58			

Part II

1. A sample of human blood was tested and found to have a pH of 7.43. Calculate $[H^+]$ and $[OH^-]$.

2. Calculate the pH of a 2.0M HCl solution.

3. Calculate the pH of a 0.15M NaOH solution.

4. Calculate the pH of a 0.025M Ba(OH)₂ solution.

Part III

Show all work, and state any assumptions you make. Consult K_a tables where necessary.

1. Determine the pH of a 0.5M HF solution.

2. A 0.10M solution of a weak monoprotic acid has a pH of 1.6. Calculate K_a .

3. Calculate the value of K_b for the acetate ion, CH₃COO⁻.

4. Calculate the pH of a 1.0M solution of NH₃.
