Acids, Bases, and Titrations

Introduction

Hi, I'm Phil!

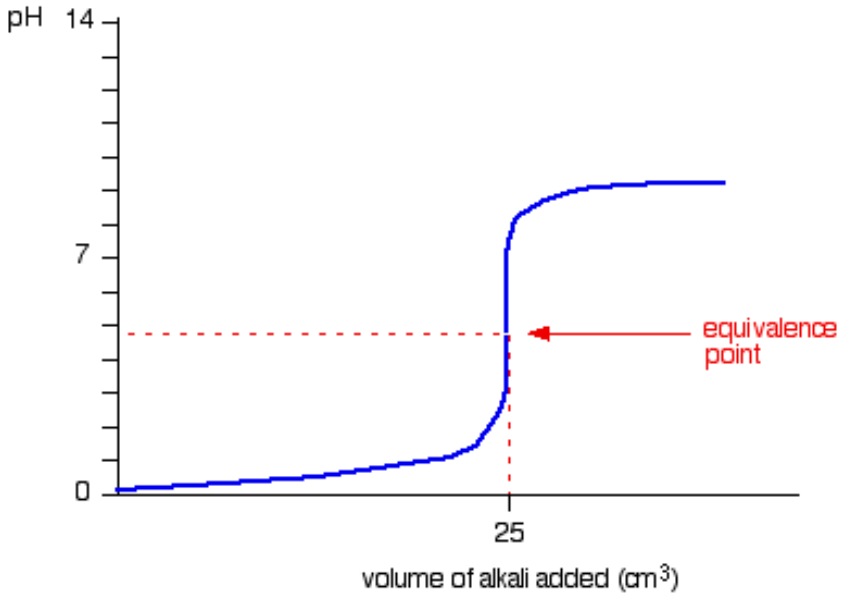
- MCAT Content writer
- Tutored and taught for 10+ years
- Attended University of Nebraska Medical Center as an MD/PhD student.

Titrations

Used to determine the concentration of an acid or base!

At equivalence point, we have one acid molecule for every base molecule

Ma Va = Mb Vb

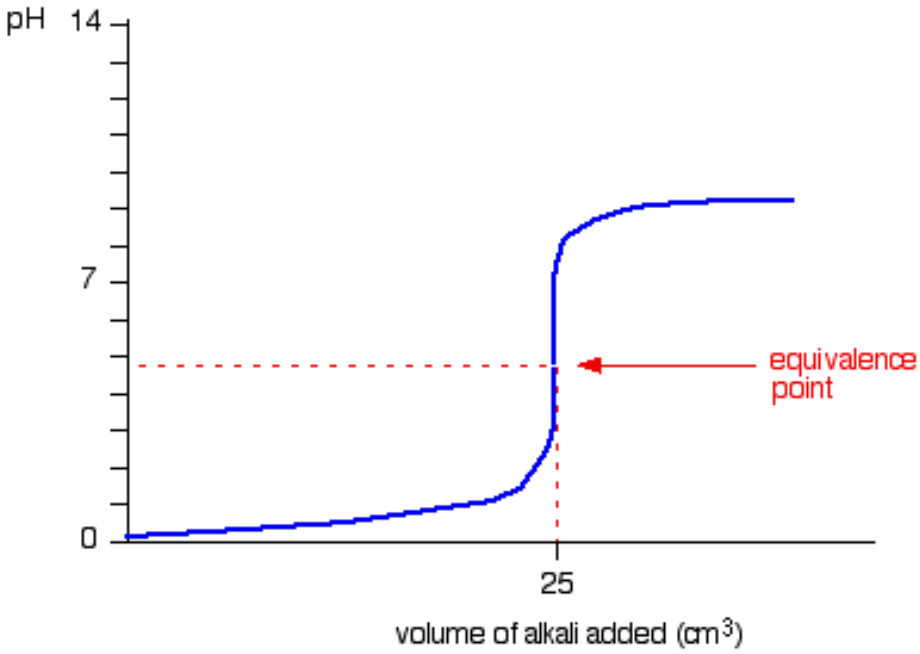


If I started with 5 mL of an HCl solution and titrated with 1M of a Base as shown, what was my acid concentration?

Was it a strong or weak base?

Titrations

Where on the graph will I find the most HCl?



HCl ← → H+ + Cl-

What happens at the ½ eq pt?

pH = pKa + log (Conjugate base/Acid)

Titrations

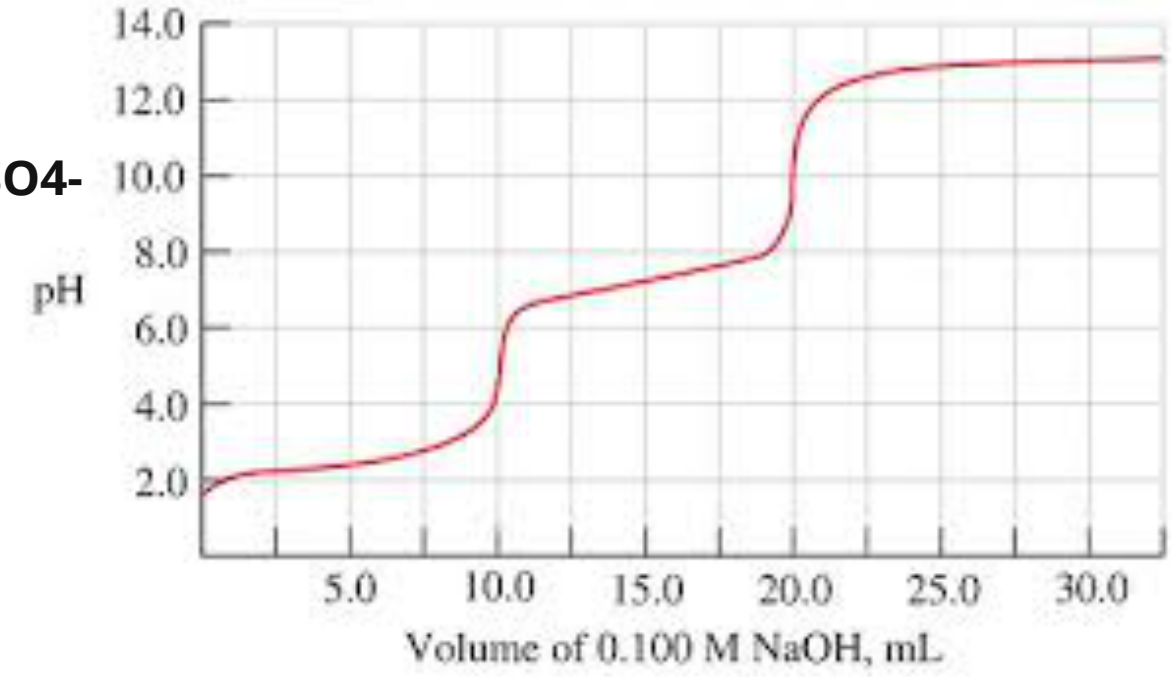
What can you tell me about my acid?

If I started with 5 mL of my acid, what is it's concentration?

$H_2SO_4 \leftrightarrow HSO_4^- + H^+ \leftrightarrow SO_4^{2-} + 2H^+$

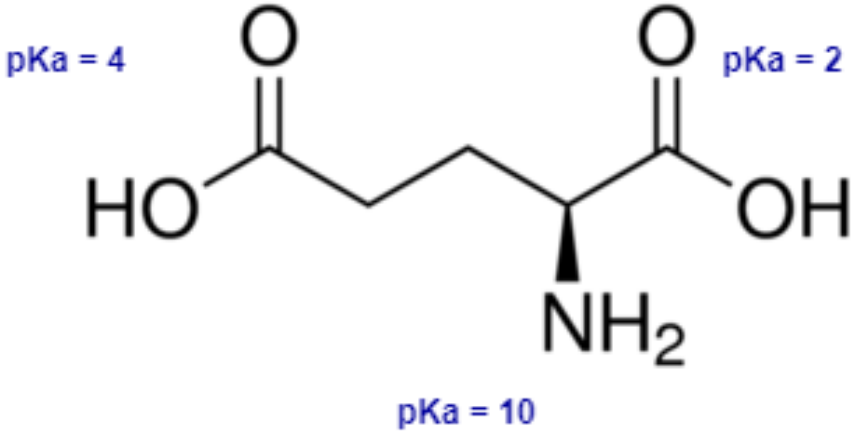
Where will I find the most HSO4-

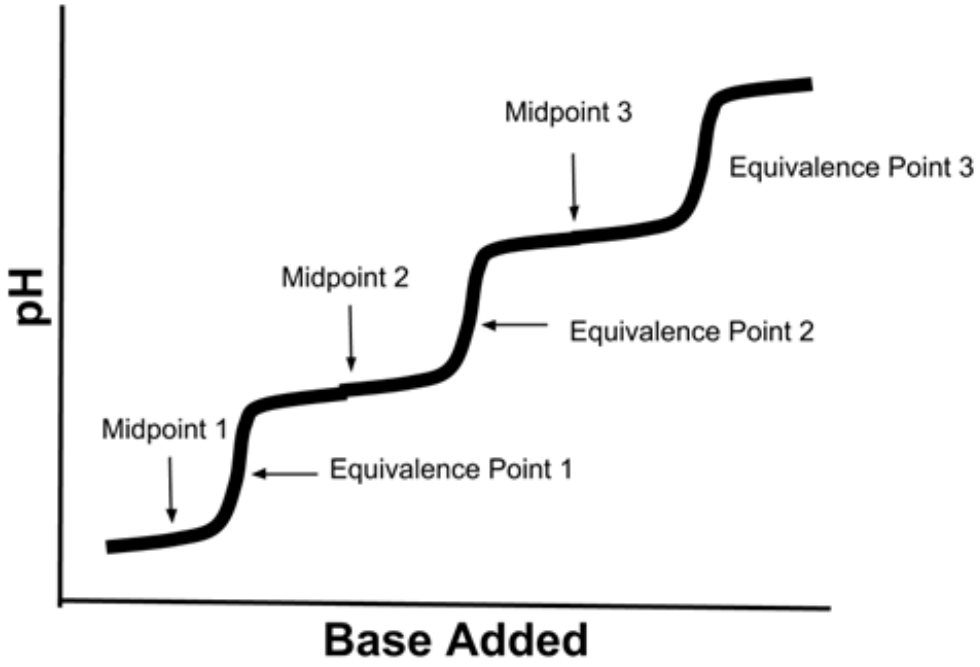
What are the pKas?



Titrations

What is the pH where this molecule has no overall charge?





What is the pI for the following POLYPEPTIDE?

H2N - Glu- Ala – Val – Arg – His – COOH

Pkas
Carboxy backbone – 2ish
Amino – 9ish
Glu – 4
Asp – 4
His – 6
Arg – 12
Lys – 10.5

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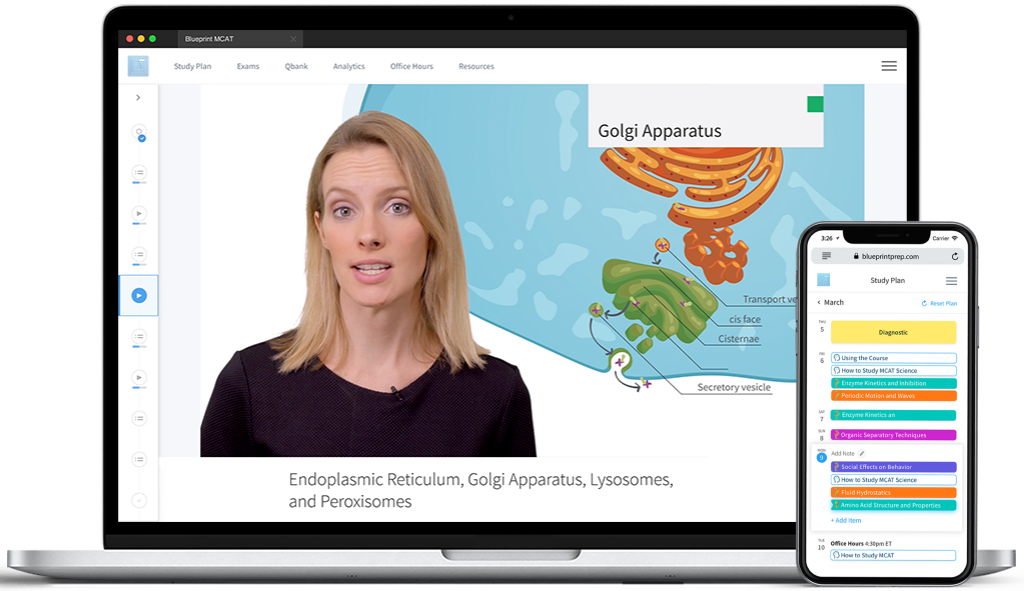

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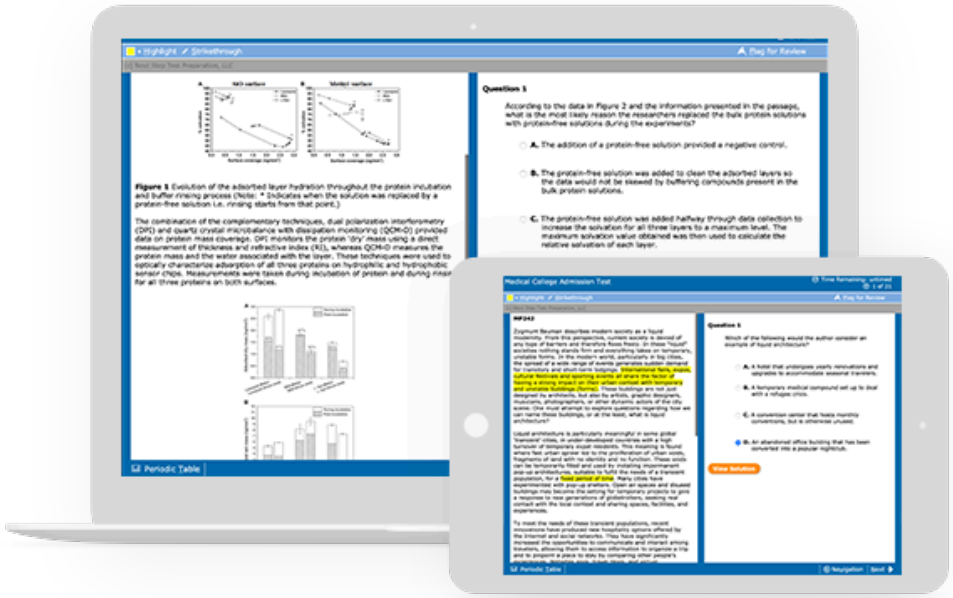

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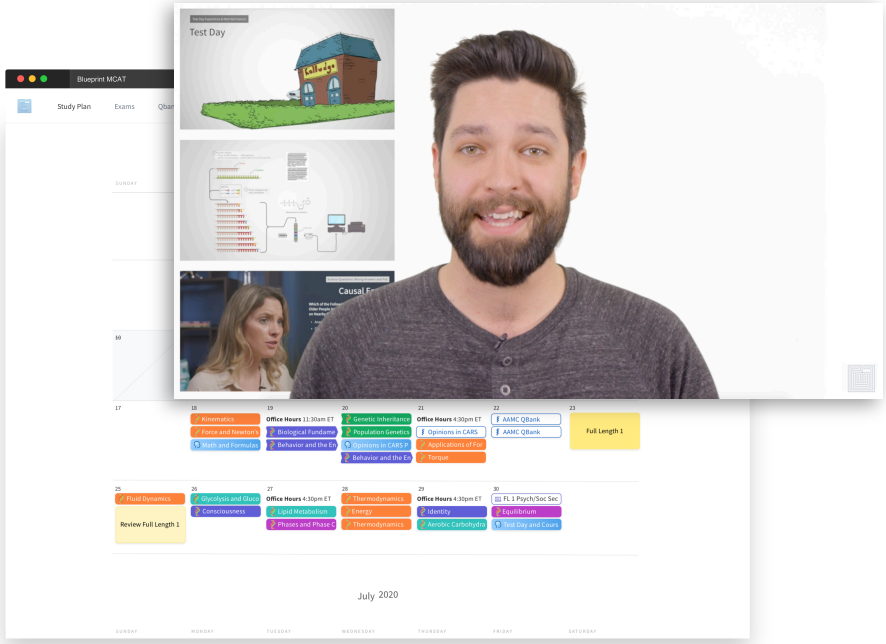

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