Biochemistry

FINAL EXAM REVIEW SHEETS / 8 pages / 16 worked ideas

01 BUFFERS AND CHARGE

Read the prompt, pick the governing idea, then verify the result.

Henderson–Hasselbalch

RULE

pH = pKa + log10([base]/[acid]).

DECISION CUE / TRAP

At pH=pKa, the conjugate pair is 1:1.

TRY IT

A buffer has pH 7.0 and pKa 6.0.

WORKED STEP

[base]/[acid] = 10^(7−6) = 10.

COVER & RECALL / REDO THE EXAMPLE WITHOUT LOOKING

Charge vs pH

RULE

Below its pKa an ionizable group tends to be protonated; above it, deprotonated.

DECISION CUE / TRAP

The pI is the pH where net charge is zero.

TRY IT

A carboxyl group with pKa 2 at pH 7.

WORKED STEP

pH is above pKa, so the group is mainly COO−.

COVER & RECALL / REDO THE EXAMPLE WITHOUT LOOKING

SAMPLE

Watermarked sample - full pack has 8 pages and 16 worked ideas