

SECTION

2

Amino Acids and the Primary Structure of Proteins

POST-ACTIVITY

SKILL EXERCISES

1. Draw the complete chemical structure of the following peptide. Indicate what solution pH you have chosen for your drawing, and make sure your drawing shows charges consistent with your stated pH.

Gln – His – Ser – Val – Phe

2. On graph paper, draw the appropriate titration curve for the peptide shown in question 1. Label the pK_a s and equivalence points on the curve.
3. Below the titration curve, draw the chemical species that occur at each buffering region or equivalence point. You may use stylized structures as demonstrated at the bottom of p. 6 of *Foundations of Biochemistry* (4th ed).
4. Estimate the pI for the peptide given in question 1. Show your work.

5. Imagine the peptide sequence was changed slightly to the alternate sequence

Gln – His – Ser – His – Phe

What change, if any, would this have on the pI of the peptide? Justify using structures, pK_a s, and/or calculations.