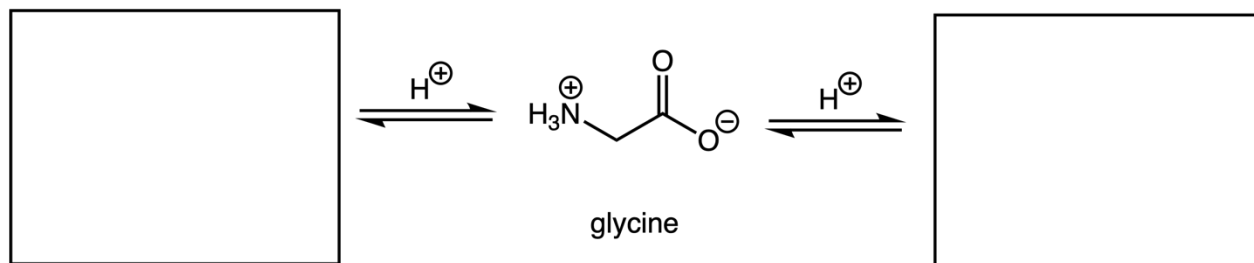
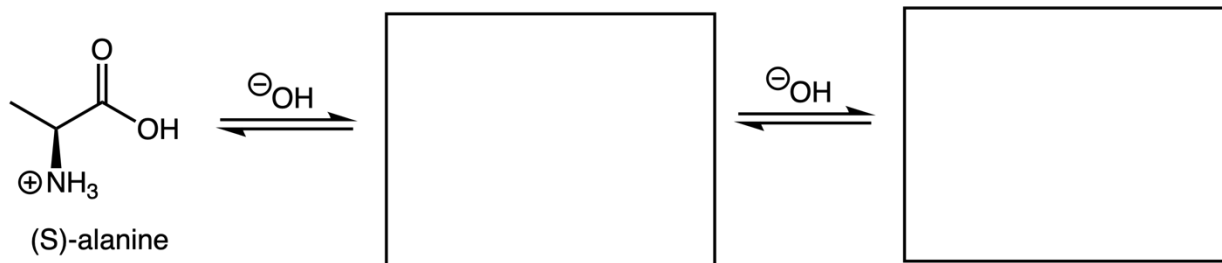
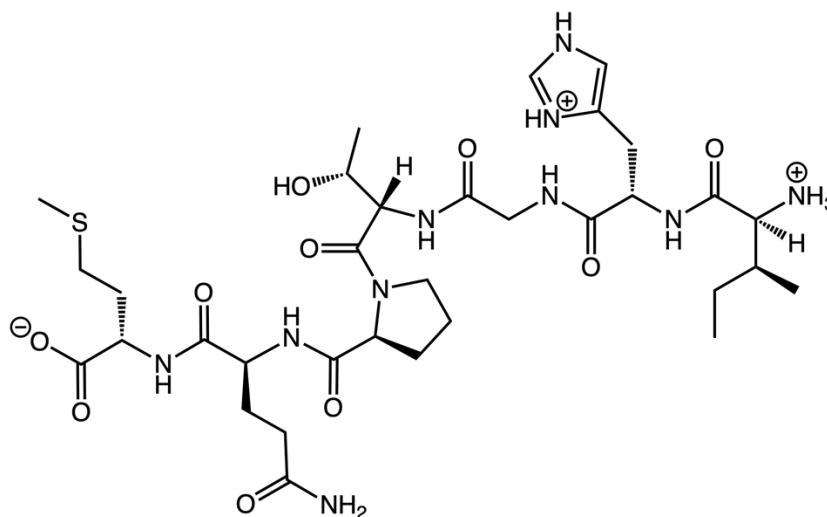


1. Complete the following schemes for (S)-alanine and glycine.



2. Identify all the amino acids that make up the following peptide. Then name the peptide using the three-letter abbreviations for the amino acids.

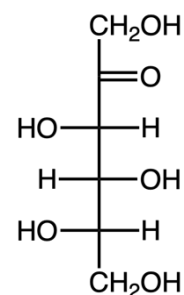


3. Identify the net charge on each of the following at pH = 6. Assign each as acidic, basic, or neutral.
- GlyLeuVal
 - LeuTrpLysGlyLys
 - GluLysAspAlaPheIle
4. Predict the most likely product formed from heating alanine in methanol with HCl catalyst.

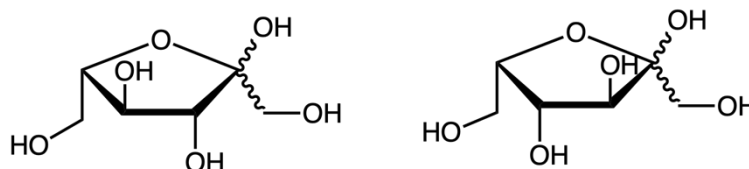
5. Consider L-sorbose, which is shown in the following Fischer projection.

A) Which of the following describe sorbose?

- Hexose
- Aldohexose
- Ketohexose
- Glycoside



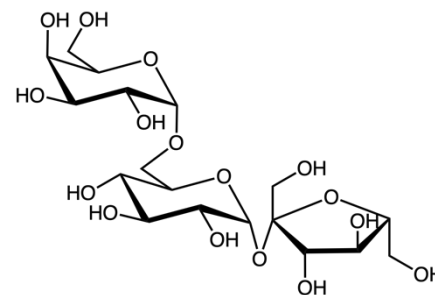
B) Which of the following is the correct Haworth projection for the cyclic form of sorbose?



6. Consider the trisaccharide raffinose.

A) Is raffinose a reducing sugar? How can you tell?

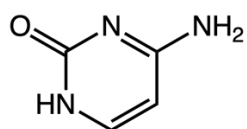
B) Assign each of the glycosidic bonds as α or β .



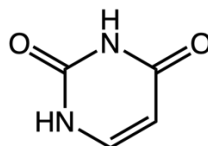
7. The compounds cytosine, uracil, and thymine are shown below. Each exhibits aromatic character.

A) What are the requirements for a compound to be aromatic?

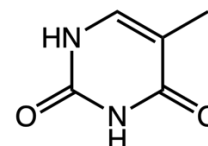
B) Explain why the following compounds might have aromatic character.



cytosine



uracil



thymine