

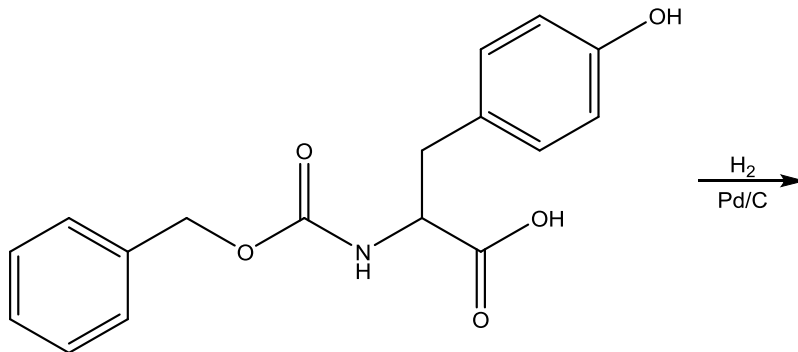
Amino Acids

CHE 118C Workshop 18 Worksheet

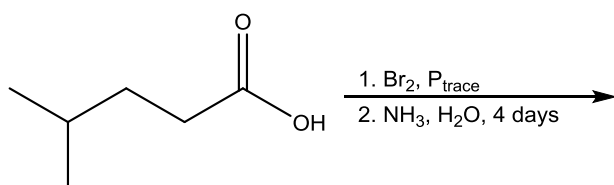
Structure, Isoelectric Point, HVZ, Strecker Synthesis, Peptide Bond, Edman Degradation, Protecting Groups UCD AATC

Ex. 1: Predict the major product for the following:

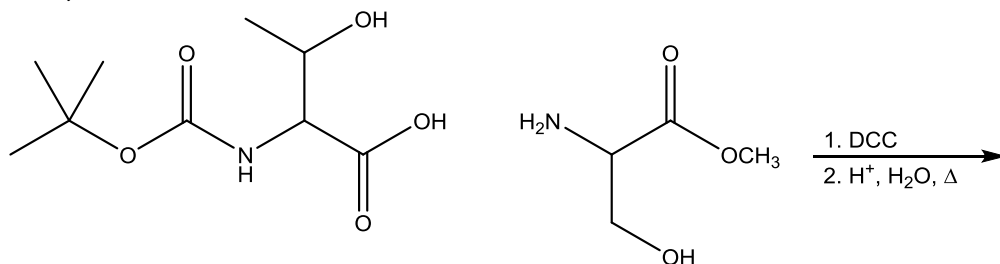
a)



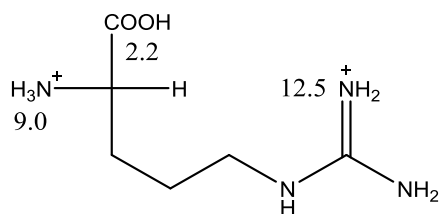
b)



c)



Ex. 2: Determine the pH at which the following amino acid exists as a zwitterion (AKA isoelectric point):

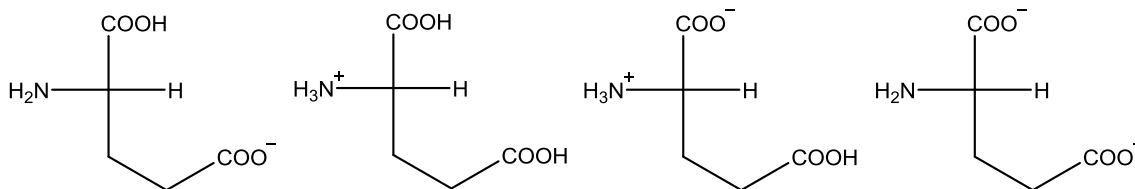


Ex. 3: Which of the following structures of glutamic acid is a zwitterion? Given the following pK_a 's, determine the pI :

$\alpha\text{-COOH}$: 2.2

$\alpha\text{-NH}_3^+$: 9.7

R group: 4.3



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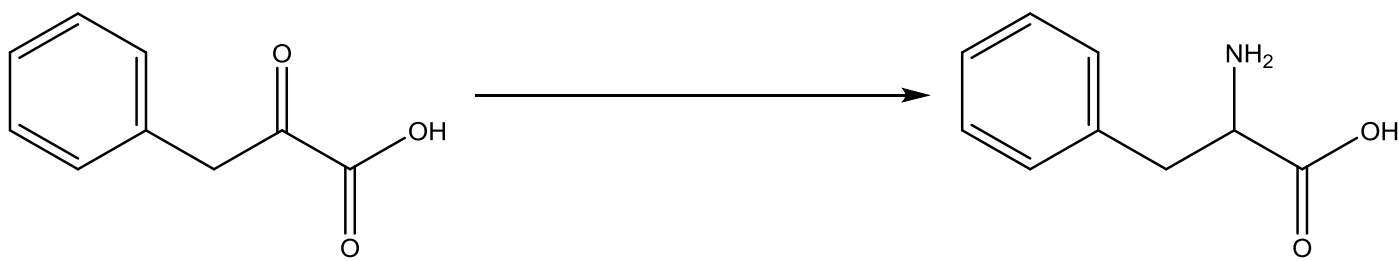
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Ex. 4: Draw the structure of the following pentapeptide: Glu-Val-Ser-Gly-Gln (Refer to Table 26-1 in text for R groups)

Ex. 5: Propose a synthesis for the following:

a)



b) Lysine using the Strecker Synthesis



c) Isoleucine using Gabriel Malonic Ester Synthesis (start from phthalimide)

