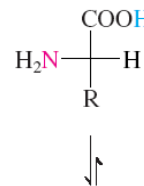


**Amino Acids**

Most amino acids = \_\_\_\_\_  
 \_\_\_\_\_ occur in nature

Humans can only synthesize 12, remaining \_\_\_\_\_

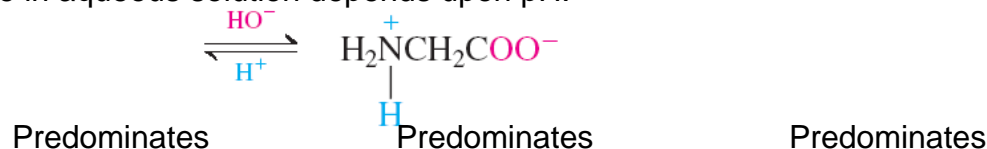


**Amino acids are acidic and basic:** \_\_\_\_\_

Amino group: \_\_\_\_\_ Carboxylic acid: \_\_\_\_\_

Neutral molecule with positive/negative charges = \_\_\_\_\_

Amino acid structure in aqueous solution depends upon pH:



Isoelectric point =

To calculate isoelectric pH (pI):

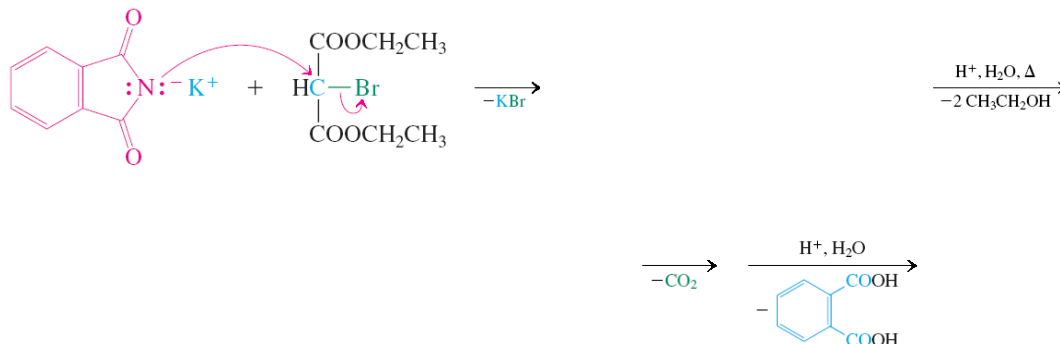
No ionizable group =

4 acidic side chains =

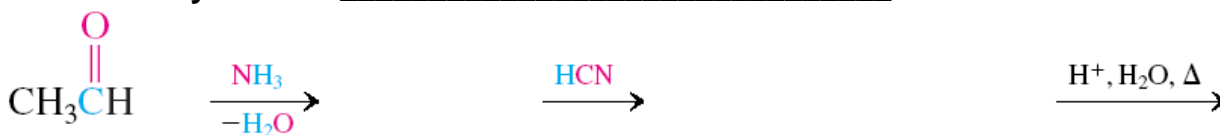
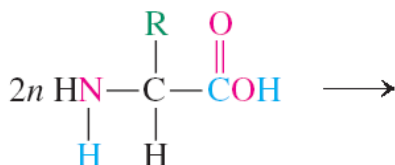
3 basic side chain =

**Synthesis of Amino Acids**

Gabriel synthesis can be adapted to produce AAs



**Strecker synthesis:** \_\_\_\_\_

**Peptides and Proteins****Protein Structure**

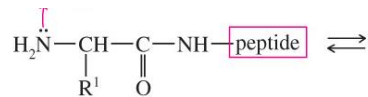
Primary structure: \_\_\_\_\_

Tertiary structure: \_\_\_\_\_

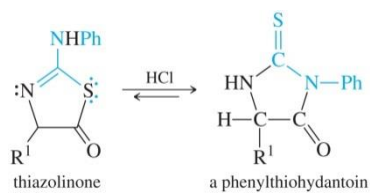
Secondary structure: \_\_\_\_\_

Quaternary structure: \_\_\_\_\_

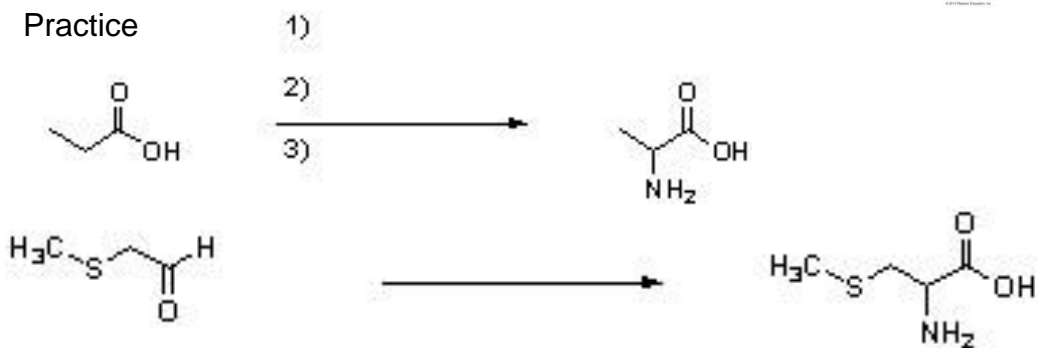
## Edman Degradation – remove AA from peptide



### Last Step of the Edman Degradation



### Practice



### Mechanism

