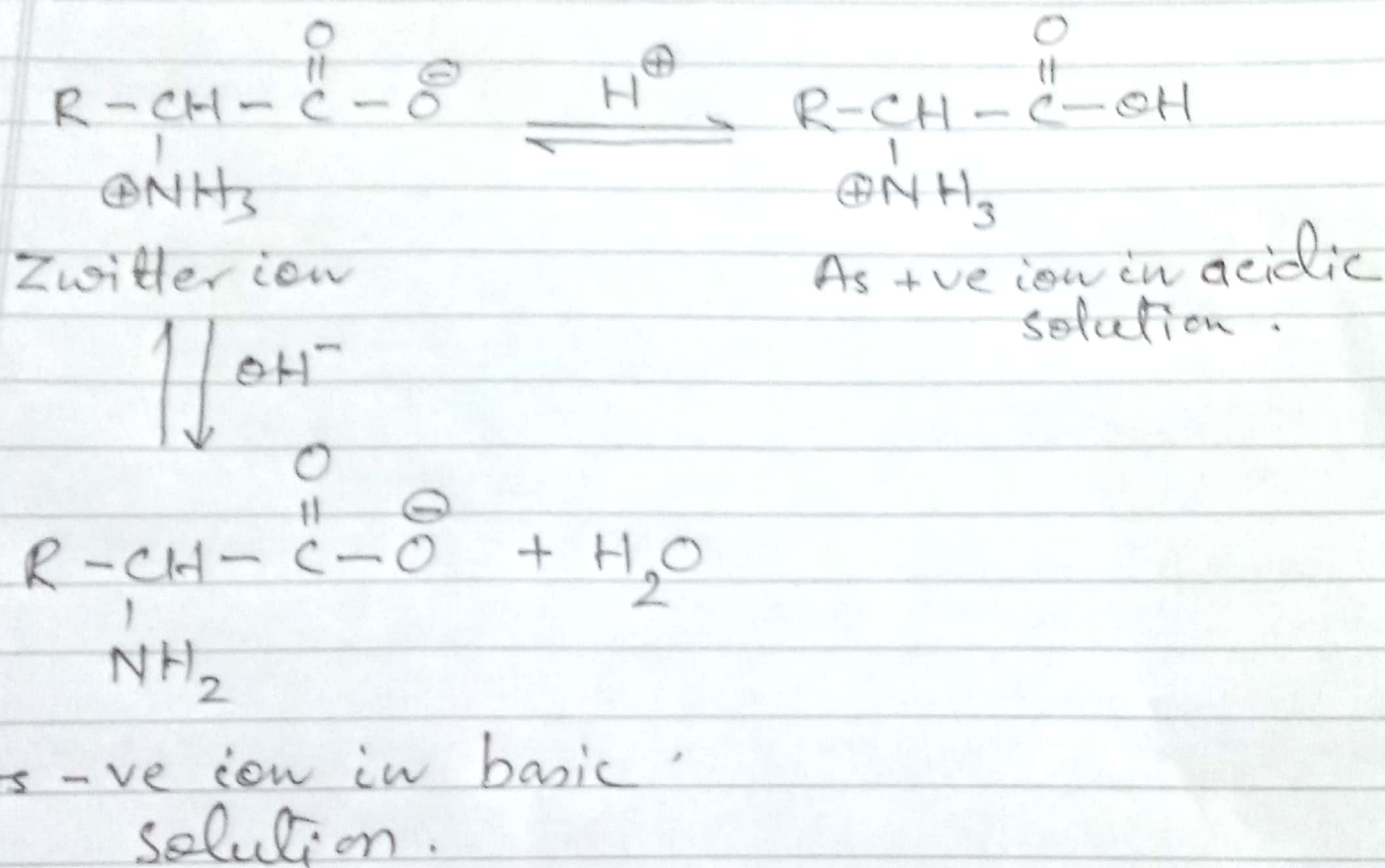


Reactions of α -amino acids

In solid state amino acids exist as crystalline solid. They are soluble in polar solvents like water, but insoluble in organic solvents like alcohol, ether, benzene etc.

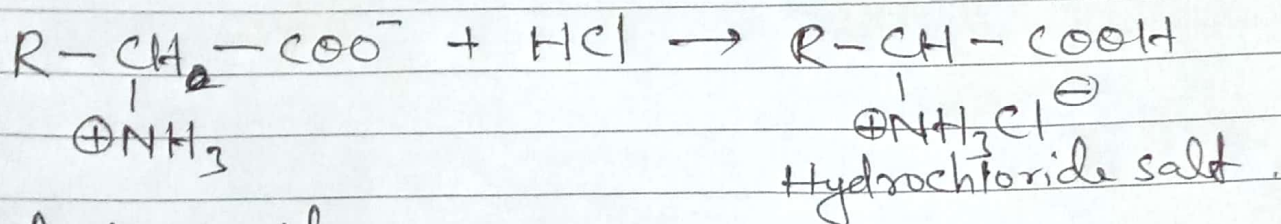
In solution amino acids exist as charged molecules with high dipole moment. This is due to zwitter ion characteristics. In this form amino acids have amphoteric behaviour.



The amino acids show reactions of both carboxylic acid groups and amino groups. In presence of other functional groups in the side chain also exhibit their characteristic reactions.

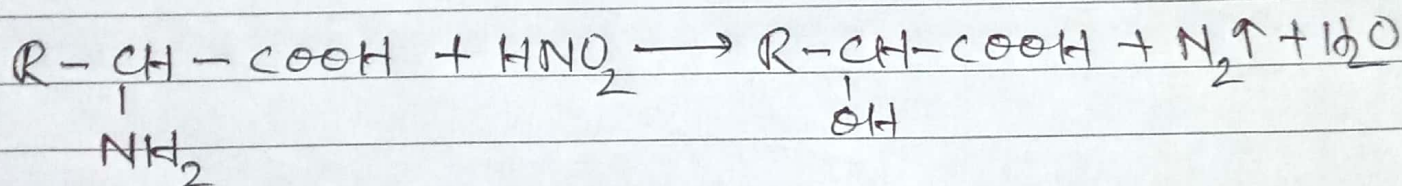
(A) Reactions due to amino ($-NH_2$) group.

- (1) With mineral acids - Amino acids behave as weak bases, hence undergo salt formation with mineral acids.

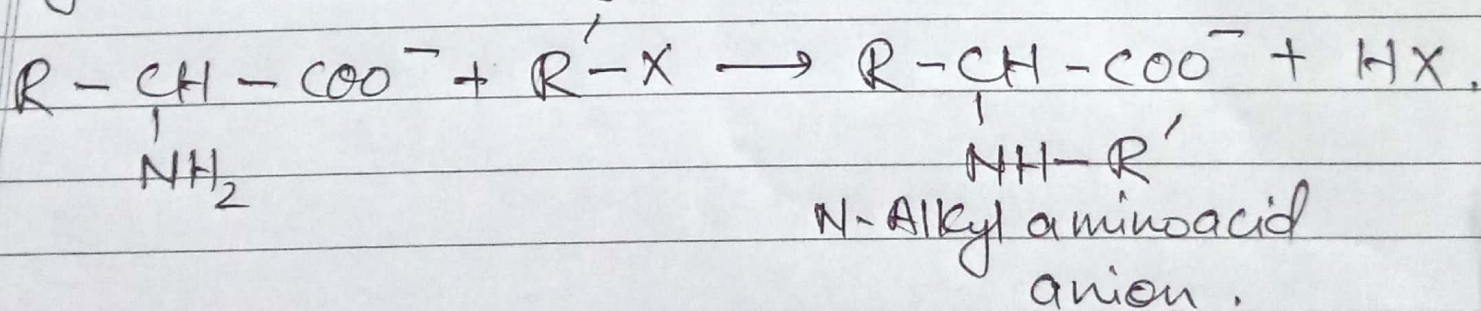


α -Amino acid.

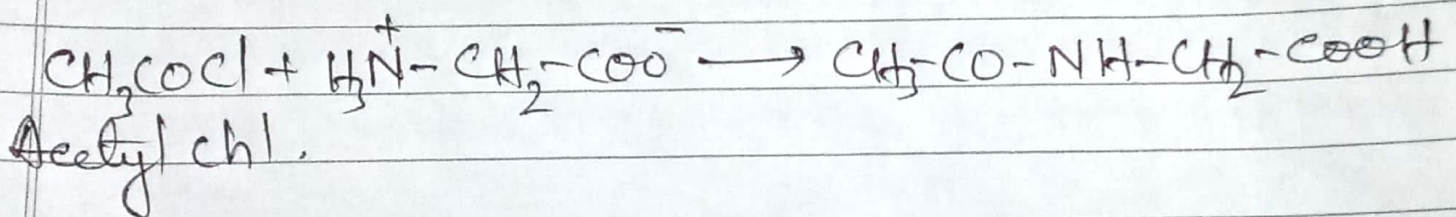
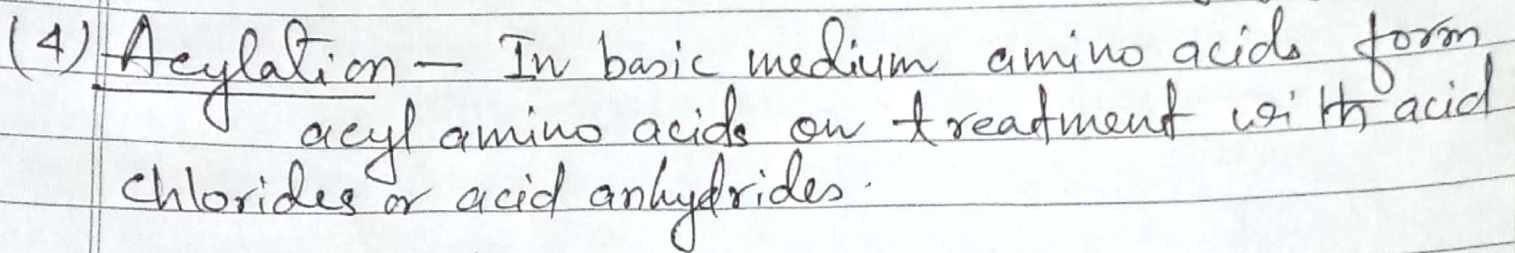
- (2) With nitrous acid - Liberate nitrogen gas and amino group is converted into hydroxyl group.



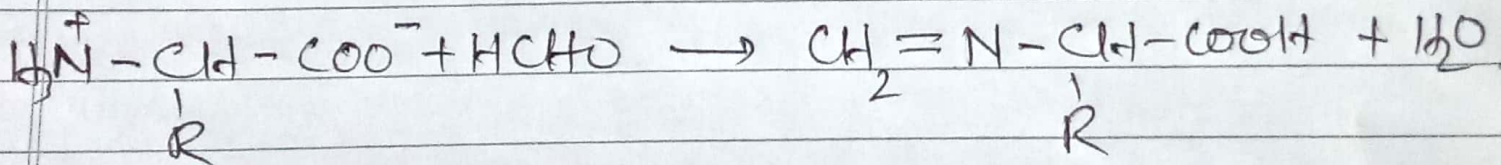
- 3) Alkylation - In the basic medium, amino gr. is ~~replaced~~ converted into N-alkyl derivative by action of alkyl halide.



In presence of excess alkyl halides, quaternary ammonium salts are formed.



(5) With formaldehyde - Amino acids form N-methyl-N-methylenamino acids.



This reaction can be used in masking the amino ~~group~~ group

(6) With Nitrosyl chloride or bromide.

