

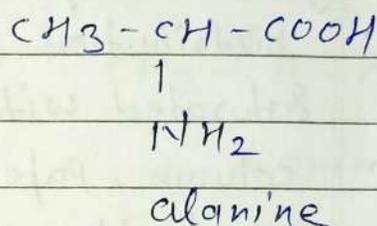
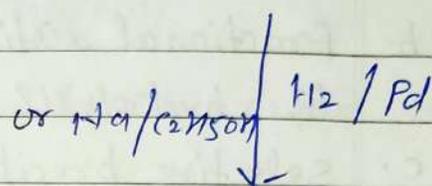
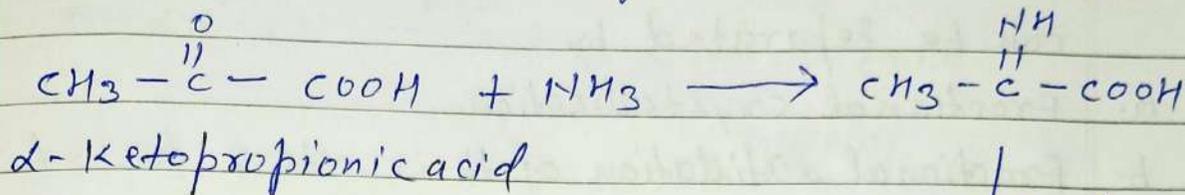
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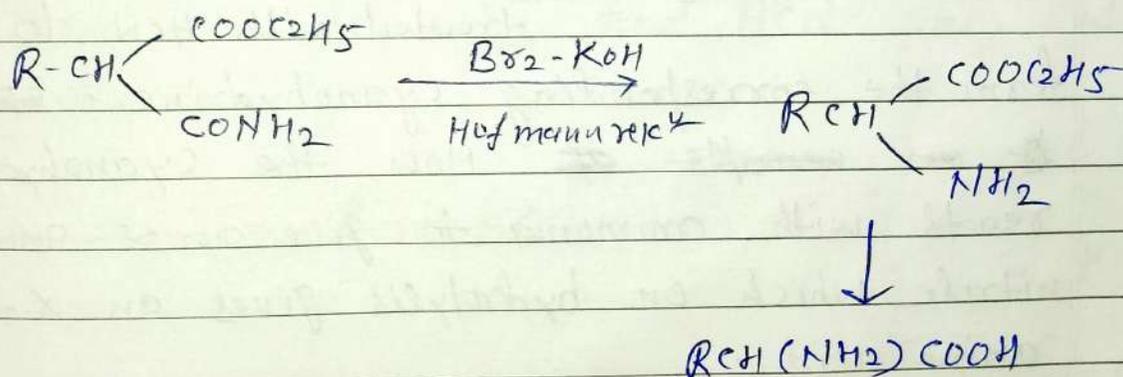
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continue  $\Rightarrow$

3. By Koop's synthesis  $\alpha$ -keto acids are treated with ammonia to form the corresponding imine which on catalytic reduction gives an amino acid.



4. Hofmann degradation - Hofmann degradation of malonic ester amide also constitutes one of the method of preparing amino-acids.



5. By Hydrolysis of Proteins — Proteins can be hydrolysed by refluxing with dilute HCl to give a mixture of  $\alpha$ -amino acids. The resulting mixture can be separated by

- a. Fractional crystallisation
- b. Fractional distillation of their esters followed by hydrolysis
- c. Selective precipitation as salts with phosphotungstic and picric acid.
- d. Distribution of amino acid between n-butanol saturated with water.
- e. column, Paper and gas chromatography and
- f. Electrophoresis.

All of these Paper chromatography and electrophoresis are the most widely used techniques.