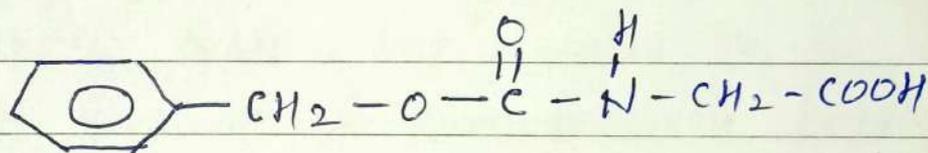
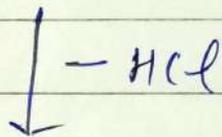
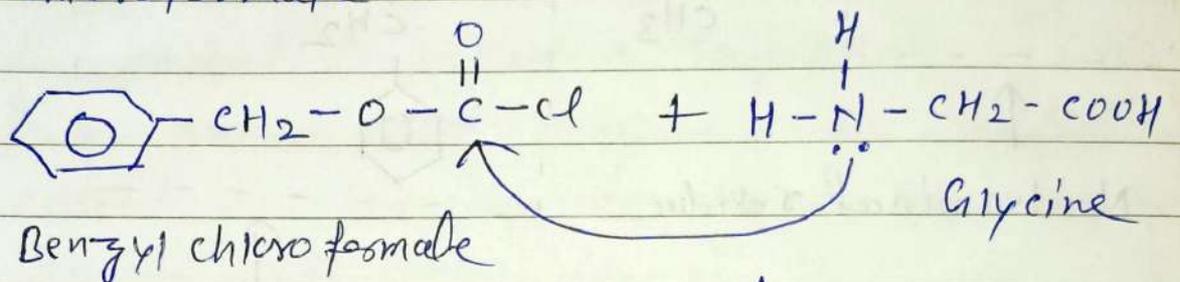


## Synthesis of Peptides! -

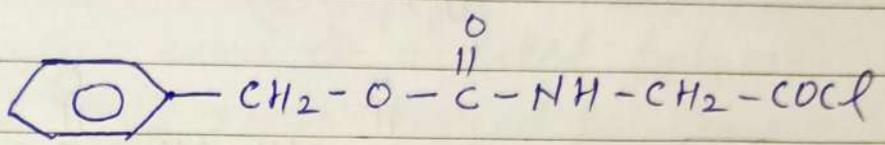
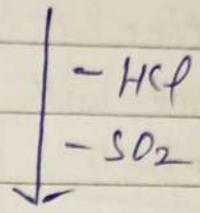
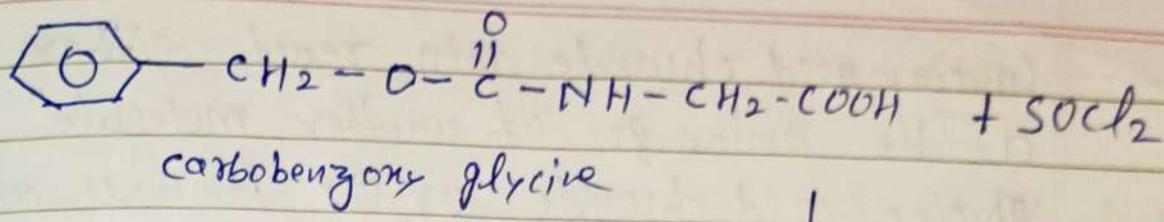
Specific peptides can be obtained by the following steps. Glycylalanine (Gly-Ala) is taken as an example.

Step-1 - The amino gr. of Glycine is protected by treatment with benzyl-chloroformate.

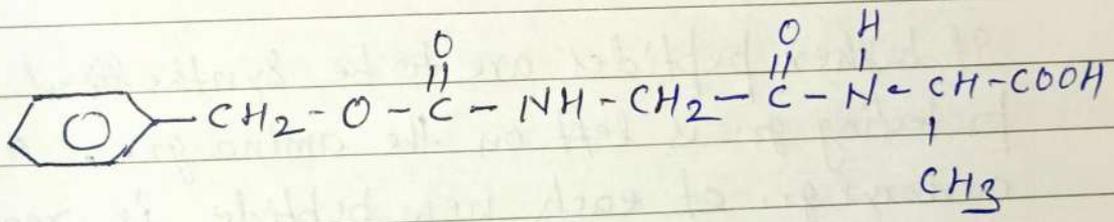
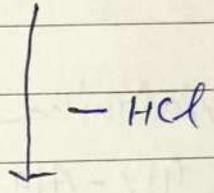
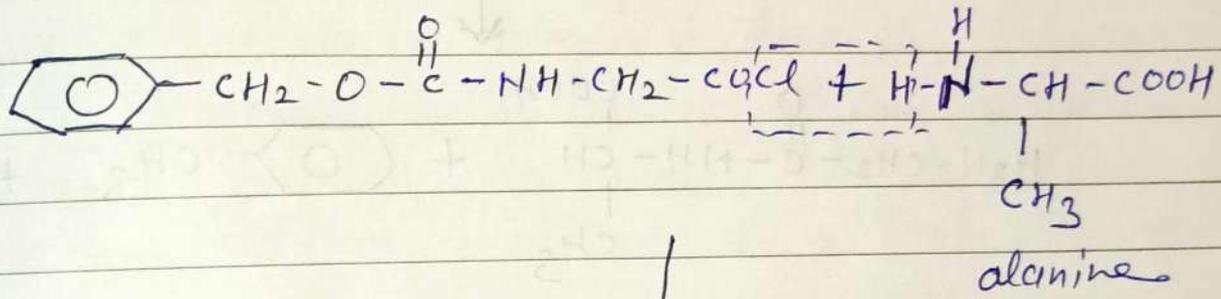


carbobenzyloxy glycine

Step-2 1 - The protected glycine is converted to the corresponding acid chloride by treatment with thionyl-chloride.



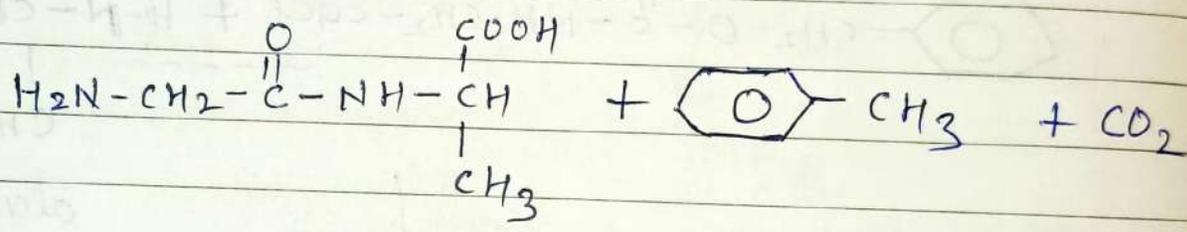
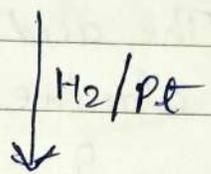
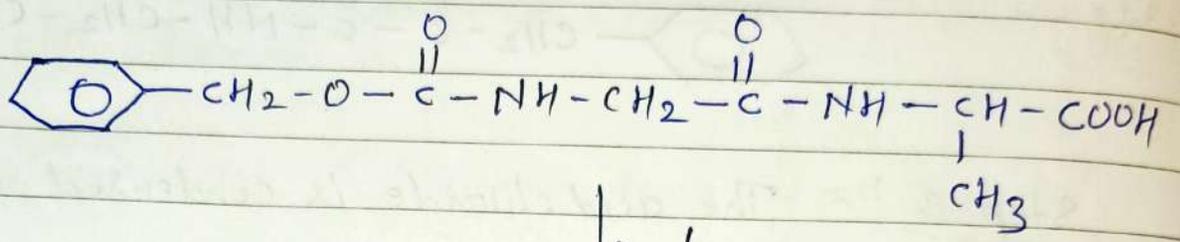
Step-3 - The acid chloride is condensed with alanine.



If the amino gr. of glycine is not protected in step-1 and the reaction is carried with glycine acid chloride, two reactions will occur.

Glycine acid chloride will react either with (1) the amino gr. of another molecule of glycine acid chloride or (2) it will also react with alanine as in this step.

Step-4 ! — The protecting group of glycine is removed by reduction.



glycylalanine  
(Gly-Ala)

Toluene

If higher peptides are to be synthesized, the protecting gr. is left on the amino gr., and the carboxyl gr. of each new peptide is reacted with  $\text{SOCl}_2$  and a new amino acid is added there on. Although, process of polypeptide synthesis is very rigorous but small proteins like ribonuclease with 124 amino acid units have been successfully synthesized.