

GCE A level Chemistry A (H432)
H432/02 Synthesis and analytical techniques

Question Set 22

3. The general formula of an α -amino acid is $\text{RCH}(\text{NH}_2)\text{COOH}$.

(a) The α -amino acid cysteine ($\text{R} = \text{CH}_2\text{SH}$) shows optical isomerism.

Draw 3-D diagrams to show the optical isomers of cysteine.

[2]

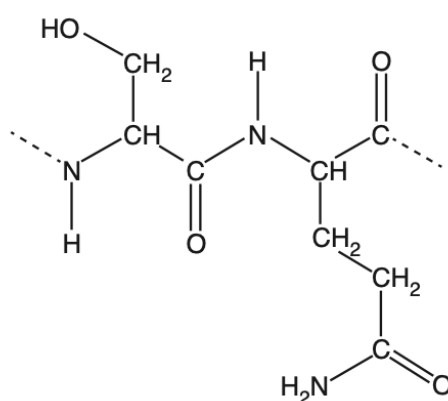
(b) The α -amino acid lysine ($\text{R} = (\text{CH}_2)_4\text{NH}_2$) reacts with an excess of dilute hydrochloric acid to form a salt.

Draw the structure of the salt formed in this reaction.

[2]

(c) α -Amino acids can react to form proteins.

A short section of a protein chain is shown below.



A student hydrolyses the protein with hot $\text{NaOH}(\text{aq})$.

Draw the structures of the organic products formed from this section of the protein.

[3]

Total Marks for Question Set 22: 7

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