

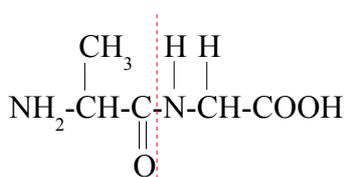
## Chemguide – answers

### PROTEINS: HYDROLYSIS

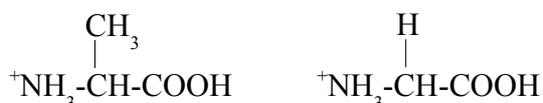
1. These are potentially confusing! Work out what you would do with the amide, and then do the same thing to the peptide chains.

In the amide, you can think of water breaking the bond between the CO group and the nitrogen, and the CO group becomes COOH. You can think of the nitrogen as first forming ammonia, which then turns into an ammonium ion because of the acid present. That would be true of any nitrogen in the products which had a lone pair of electrons.

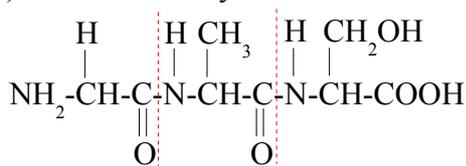
a) First find the peptide links you need to break:



Then replace the CO by COOH, and (mentally) add a hydrogen atom to the NH group to give an NH<sub>2</sub> group. Then add hydrogen ions to the lone pairs on any NH<sub>2</sub> groups to make NH<sub>3</sub><sup>+</sup> groups. Don't forget the NH<sub>2</sub> group at the N-terminal.



b) In the same way:



Leading to:

