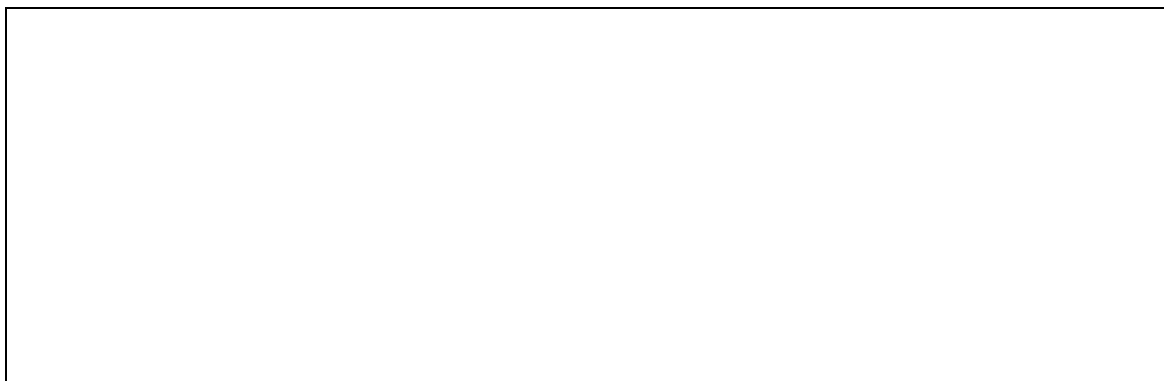



Marks
5

- Glycine, $\text{NH}_2\text{CH}_2\text{COOH}$, the simplest of all naturally occurring amino acids, has a melting point of $292\text{ }^\circ\text{C}$. The $\text{p}K_a$ of the acid group is 2.35 and the $\text{p}K_a$ associated with the amino group is 9.78. Draw a structure that indicates the charges on the molecule at the physiological pH of 7.4.



Describe the hybridisation of the two carbon atoms and the nitrogen atom in glycine and the geometry of the atoms surrounding these three atoms.



Glycine has an unusually high melting point for a small molecule. Suggest a reason for this.

