Amino acids, Proteins and DNA – A2 2022 Chemistry P2&P3

1. June/2022/Paper_7405/2/No.4

0 4 Protei

Proteins are polymers made from amino acids. Part of the structure of a protein is shown.

-Cys-Ser-Asp-Phe-

Each amino acid in the protein is shown using the first three letters of its name.

0 4. 1 Identify the type of protein structure shown.

[1 mark]

Tick (✓) one box.

Primary

Secondary

Tertiary

0 4.2 Draw a structure for the -Cys-Ser- section of the protein. Use the Data Booklet to help you answer this question.

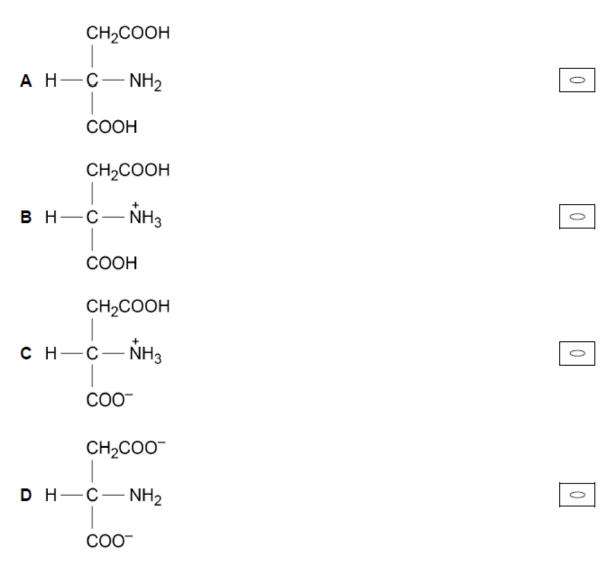
[2 marks]

0 4.3	Name the other substance formed when two amino acids react together to form part		
	of a protein chain.	[1 mark]	
	The general structure of an amino acid is shown.		
	H ₂ N—CH—COOH R		
	R represents a group that varies between different amino acids. R groups can interact and contribute to protein structure.		
0 4.4	Explain why the strength of the interaction between two cysteine R groups diffused the strength of the interaction between a serine R group and an aspartic acid		
	Use the Data Booklet to help you answer this question.	4 marks]	
0 4 . 5	Deduce the type of interaction that occurs between a lysine R group and an aspartic acid R group.		
		[1 mark]	

2. June/2022/Paper_7405/3/No.29

Which is the main species present in an aqueous solution of aspartic acid at pH = 14?

[1 mark]



3. June/2022/Paper_7405/3/No.33

Which statement about HOCH2CH(NH2)COOH is correct?

[1 mark]

Α	It decolourises bromine water.	0