B1.2 Proteins

What the Cell · DP Biology · worksheet · SL statements B1.2.1–5

Name _____ **Date** _____ **Total** _____ / 32

About 30 minutes, or one section at a time. A calculator is allowed. The number of marks shows how many separate points to make.

Section A: Recall

6 marks

1 **State** the name of the bond between amino acids. B1.2.2 **[1]**

2 **State** the number of different amino acids coded for in the genetic code. B1.2.4 **[1]**

3 **Distinguish** between essential and non-essential amino acids. B1.2.3 **[2]**

4 **Define** denaturation. B1.2.5 **[1]**

5 **State** the function of haemoglobin. B1.2.4 **[1]**

Section B: Understanding and drawing

12 marks

6 **Draw** a generalized amino acid, and label the groups. B1.2.1 **[3]**

7 **Draw** a dipeptide, labelling the peptide bond, and **write** the word equation for its formation. B1.2.2 **[3]**

8 **Explain** why the possible variety of peptide chains has no real limit. B1.2.4 **[3]**

9 **Explain** how a change in pH can stop a protein from functioning. B1.2.5 **[3]**

Section C: Working with data

8 marks

All data in this section are invented for practice. The patterns are realistic.

10 B1.2.5

Students measured how long egg white took to turn solid at different temperatures, in tubes of the same size.

Temperature / °C	**40**	**50**	**60**	**70**	**80**
Time to turn solid / s	No change	No change	900	120	30

a **Describe** the trend. **[2]**

b **Calculate** how many times faster denaturation is at 80°C than at 60°C. **[1]**

c **Explain** what is happening to the proteins as the egg white turns solid. **[3]**

d **Calculate** the number of possible sequences for a peptide of 5 amino acids. **[2]**

Section D: Longer answer

6 marks

11 **Outline** the reasons why there are so many different proteins, each with a particular function. B1.2.2, B1.2.4 **[6]**

What the Cell. Original questions written for this course.