

Extension worksheet – Option C

- 1 Copy and complete this table to summarize the types of bond found in protein structure. (4)

Level of protein structure	Types of bond
primary	
secondary	
tertiary	
quaternary	

- 2 An allosteric, non-competitive inhibitor may combine with an enzyme and cause the shape of the active site to change so that the substrate cannot bind to it. Such inhibitors, if they bind reversibly, can act in end-product inhibition of metabolic reactions. End-product inhibition is an example of negative feedback.

a Explain the meanings of these terms:

i allosteric site

ii non-competitive

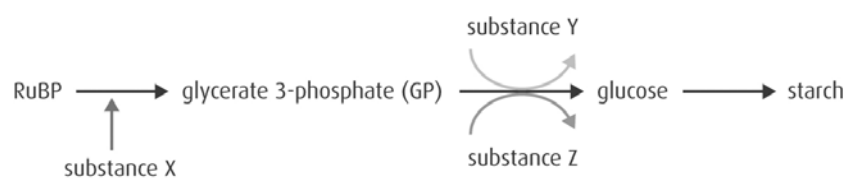
iii active site

iv end-product inhibition

v negative feedback. (5)

b Why do most enzymes work only with one substrate? (2)

- 3 The diagram below shows part of the light-independent reactions of photosynthesis.



a Identify substances X, Y and Z. (3)

b State where in the chloroplast this reaction occurs. (1)

c State what GP is used for, apart from the production of glucose. (1)

d What reaction occurs during the formation of starch from glucose? (1)



- 4** Comment on the following statements.
- a** Protein and amino acids are respired if an organism is starving. (3)
 - b** In the desert, a camel stores and respire fat rather than carbohydrate. (3)
 - c** Reactions of the Krebs cycle may stop the process of glycolysis. (2)
- 5** Draw a suitable chart to summarize the reactions of respiration. (7)
- 6**
- a** Draw and label a chloroplast to show the main features seen using an electron microscope. (3)
 - b** Annotate your diagram with the functions of the important structures. (3)
- 7** Summarize the importance of photosynthesis to life on Earth. (4)