

Section A

1. Which of these is a naturally occurring polymer?

Tick () **one** box.

A. Cellulose

B. Glucose

C. Amino acids

2. What is the function of DNA?

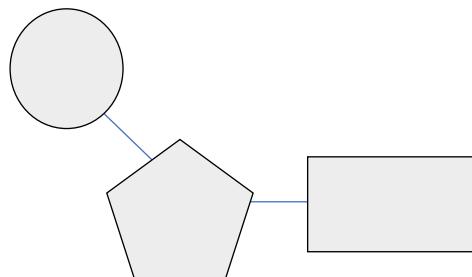
Tick () **one** box.

A. To control the movement of substances into and out of cells

B. To provide genetic instructions for development and functioning

C. To act as the brains of a cell

3. Label the three parts that make up the structure of DNA:



4. Name the term used to describe a unit containing one of each of these subunits.

5. Explain why DNA is described as a polymer.

6. State the complementary base pairs.



Section B

7. Starch and proteins are naturally occurring polymers. State the monomers that starch and proteins are made from:

Starch: _____

Proteins: _____

8. Algae are photosynthetic organisms that live in aquatic environments.

One of the products of photosynthesis is glucose.

- a. Name two naturally occurring polymers that are produced from glucose.

- b. Gas bubbles are produced when algae photosynthesise.

Name the gas produced and describe a test that could be used to identify this gas.

Gas: _____

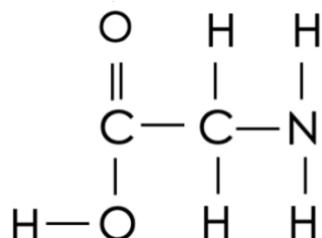
Test:

- c. The development and function of algae is controlled by another naturally occurring polymer.

Describe the shape and structure of this polymer.



9. The displayed formula below shows a molecule of glycine, an amino acid.



a. How many functional groups are there in a molecule of glycine?

Tick () **one** box.

A. 1

B. 2

C. 3

D. 4

b. Molecules of glycine can react to produce a polypeptide through condensation polymerisation.

Name the other product made in this reaction.

Section C

10. Starch is a naturally occurring polymer.

- a. Explain why starch is a polymer.
- b. Starch must be digested before it can be absorbed into the small intestine. Explain why.
- c. Describe and explain how the small intestine is adapted for diffusion of nutrients into the bloodstream.

