



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

☐

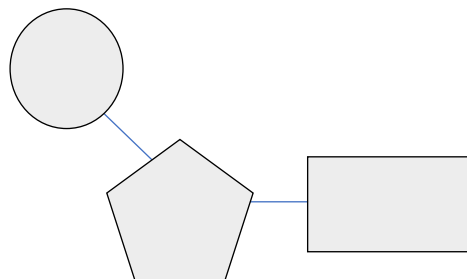
B. To provide genetic instructions for development and functioning

☐

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: _____

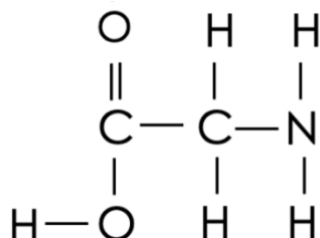
Test:

- 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.

