

Solutions

Each answer shows the steps, then the **result**.

2.1

- a protein contains **carbon, hydrogen, oxygen and nitrogen**

2.2

- proteins are made of **amino acids**

3.1 B

- Benedict's test needs **heat**
- A would slow it; C is starch; D is false

3.2

(a)

- add **iodine** solution
- orange-brown turns **blue-black**

(b)

- add **biuret** solution
- blue turns **purple**

3.3

- A pairs with T, C pairs with G
- matching strand: **T–G–C–A**

3.4

(a)

- **starch**: iodine; orange-brown → **blue-black**
- **reducing sugar**: Benedict's + heat; blue → **brick red**
- **protein**: biuret; blue → **purple/lilac**

(b)

- starch is built from **glucose**
- protein is built from **amino acids**

(c)

- Benedict's is a chemical reaction that needs **heat**
- iodine just **changes colour** when it meets starch

(d)

- carbohydrates: **C, H, O**

- proteins also always contain **nitrogen**