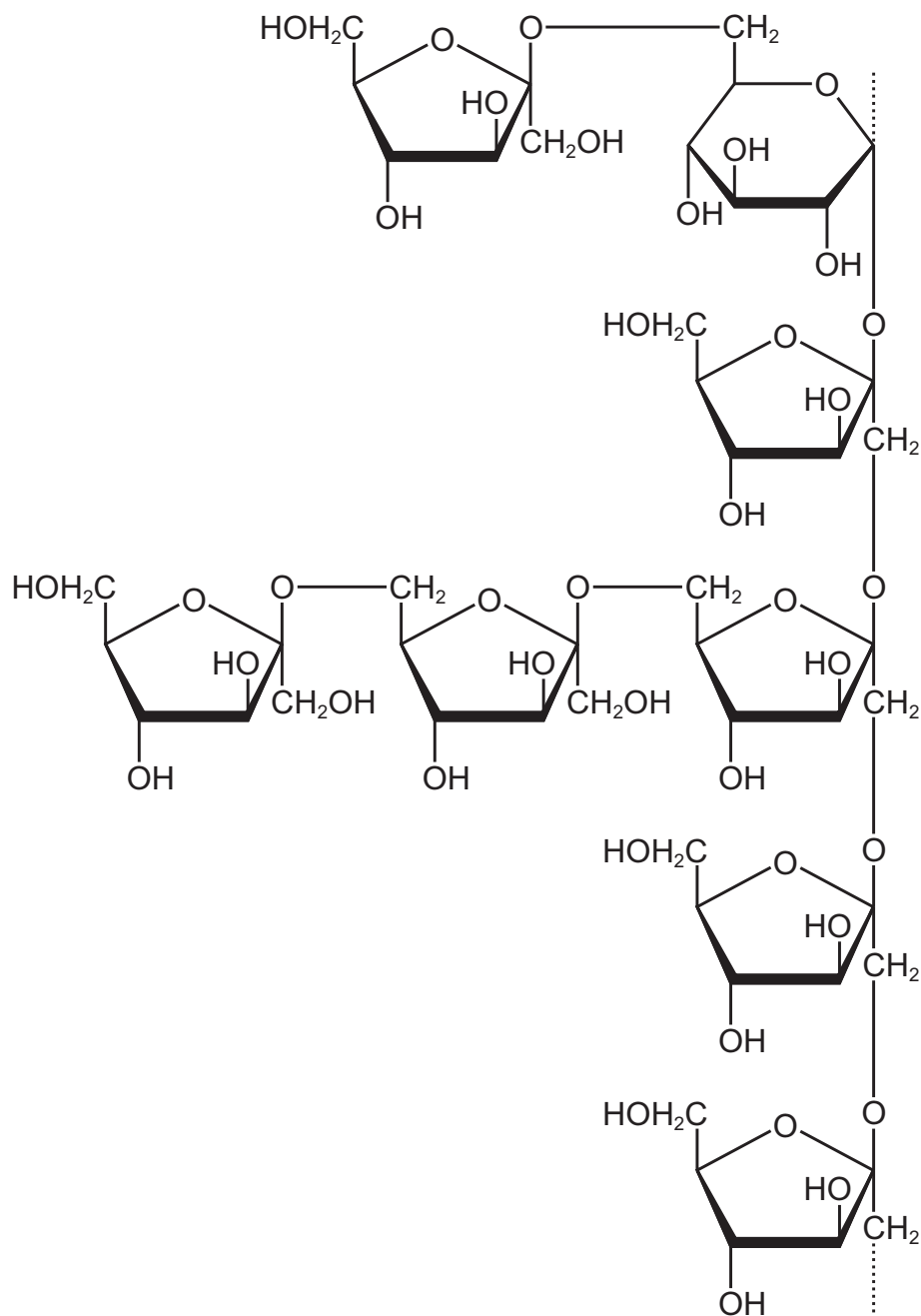


7 The diagram shows the structure of part of a biological molecule.

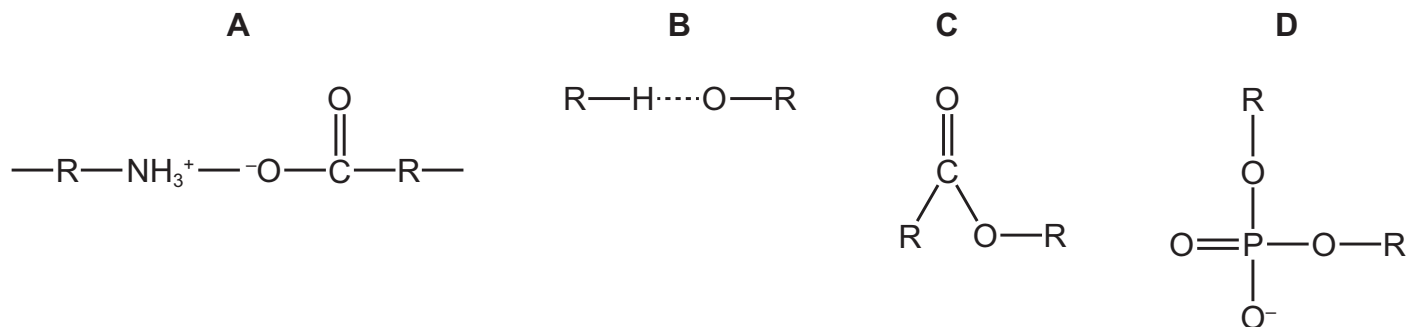


Which statements about this biological molecule are correct?

- 1 It has monomers joined by ester bonds.
- 2 It is a macromolecule.
- 3 It is a polysaccharide.

A 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

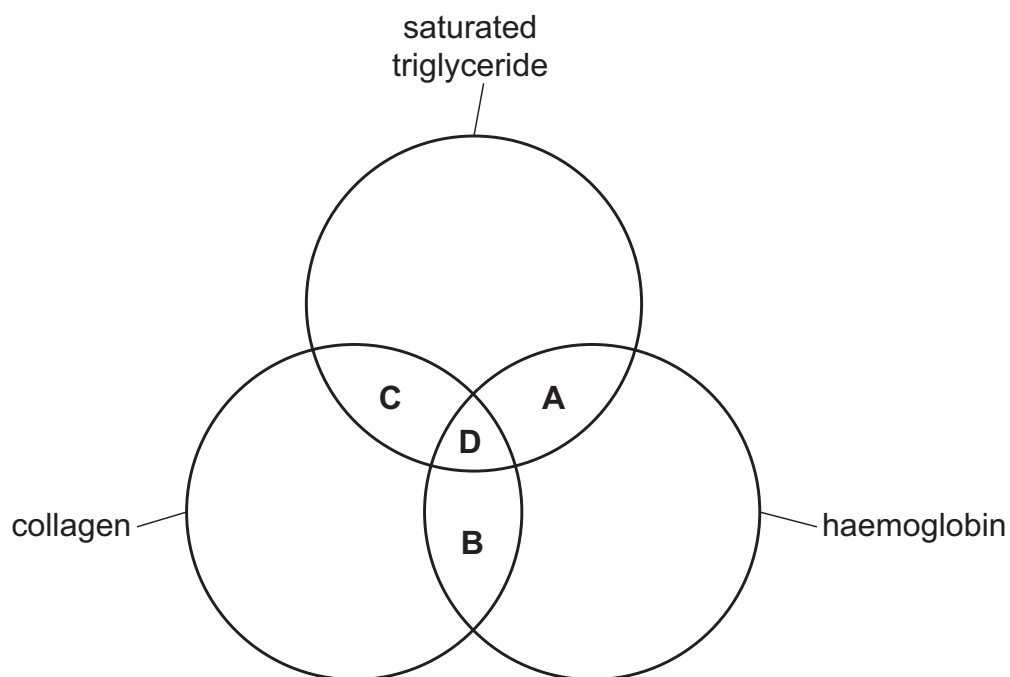
- 8 Which diagram has a covalent bond that joins monomers together to form a biological polymer in eukaryotes?



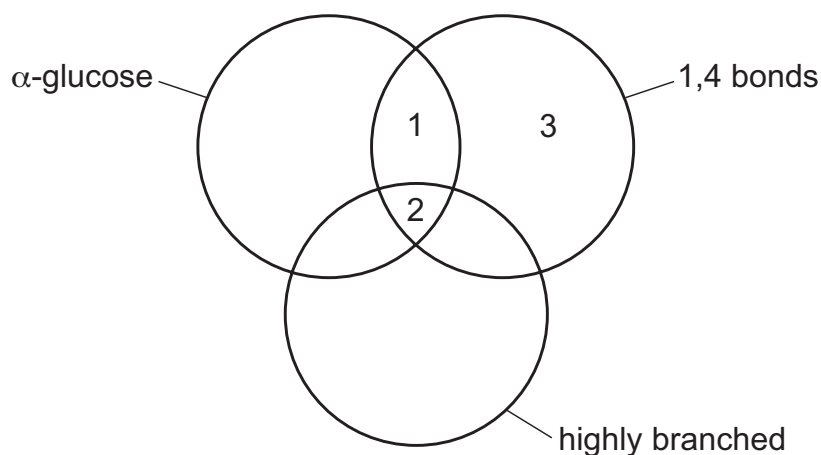
- 9 Which feature of storage polysaccharides means they do **not** change the water potential of cells?

- A** They are easily hydrolysed.
B They are compact.
C They are insoluble.
D They are branched molecules.

- 10 Which molecules contain at least four double bonds?



7 The diagram shows some relationships between features of carbohydrates.



Which row correctly matches the carbohydrate with some of its features?

	1	2	3
A	amylopectin	glycogen	amylose
B	amylose	amylopectin	cellulose
C	cellulose	glycogen	sucrose
D	glycogen	amylose	amylopectin

9 Many biological molecules exist as polymers made up of monomer subunits.

Which row correctly identifies the monomer in each of the biological molecules?

	collagen	glycogen	cellulose
A	amino acid	α -glucose	β -glucose
B	α -glucose	β -glucose	amino acid
C	β -glucose	amino acid	α -glucose
D	amino acid	β -glucose	α -glucose

11 Which row describes amylopectin?

	α -1,4 glycosidic bonds	α -1,6 glycosidic bonds	shape of molecule	function of molecule
A	✓	✓	branched	storage
B	✓	✗	helical	storage
C	✓	✓	branched	structural
D	✗	✓	helical	structural

key

✓ = present

✗ = **not** present

- 13** An unsaturated fatty acid molecule has 17 carbon atoms in the tail which is attached to its carboxyl group. The tail contains three double bonds.

How many hydrogen atoms does the tail contain?

- A** 29 **B** 31 **C** 33 **D** 35

- 7** Which molecules have a structural formula that contains C=O bonds?

- 1 glucose
- 2 glycerol
- 3 protein

- A** 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

- 9** Which row is correct for glycogen?

	glycogen is hydrolysed rapidly due to its branched structure	glycogen is insoluble so the water potential of cells is unaffected	glycogen is a compact molecule because it contains many β -glucose molecules
A	✓	✓	✓
B	✓	✓	✗
C	✗	✗	✓
D	✗	✓	✗

key

✓ = correct for glycogen

✗ = incorrect for glycogen