

Condensation polymers

1 Condensation polymerisation is a major chemical process for making long-chain polymers both in nature and in industry.

a What is the key difference between condensation polymerisation and addition polymerisation?

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.....
.....[2]

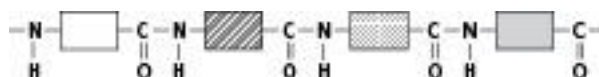
b Starch is a condensation polymer of glucose. The glucose molecule can be represented as:



Draw the structure of starch showing the linking atoms.

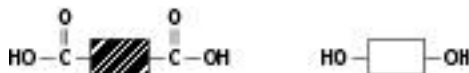
[1]

c Nylon is a man-made polyamide that has certain structural similarities to protein chains in that the linkages in the chains are the same (the amide or peptide link). Examine the following diagram of a polyamide chain and deduce whether it is a nylon chain or a protein chain.



.....
.....
.....[2]

d Using the representations of the monomers shown below, draw the structure of a polyester chain.



[2]

2 Protein chains can be analysed after they have been broken down into their constituent monomers.

a What type of monomers are polymerised to make proteins?

..... [1]

b How are protein chains broken down to their monomers before analysis?

..... [1]

c What is the name given to this type of breakdown of molecules?

..... [1]

TOTAL: __/10