Structure and Properties of Polymers Worksheet

Scoring guide · one credit per question · review written work against each rubric

Structure and Properties of Polymers

Question 1

Choice (1)

Monomer molecules are joined to form the repeating structure of a polymer chain.

Question 2

Cross-links connect chains. The bonds limit how far adjacent chains can move independently.

Question 3

Choice (2)

Less efficient packing changes the spacing between the chains.

Question 4

Samples made from the same repeating unit can differ in chain length, branching, orientation, or cross-links. Any of those features can change how the chains move and affect stiffness.

Reusable Straps

Question 5

Choice (3)

C has the least extension under the same load.

Question 6

Choose B. Its 11 mm extension is within the 10–15 mm range. A extends 18 mm and C extends 5 mm.

Question 7

Extension decreases from 18 to 11 to 5 mm as cross-link density increases. More connections restrict how far chains can move relative to one another.

Question 8

Choice (2)

Load at break directly measures the failure load.