Carbon Tracking in Photosynthesis Worksheet

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

Carbon Tracking in Photosynthesis

Question 1

Choice (1)

CO_2 is the only reactant in the net equation with a carbon atom that can carry the label.

Question 2

Six CO_2 molecules supply 6 × 1 = 6 C atoms. One $C_6H_{12}O_6$ molecule contains six C atoms, so the count is conserved.

Question 3

The glucose contains two labeled carbons. All six CO_2 carbon atoms enter the glucose in this net model, including the two labeled atoms.

Question 4

Choice (1)

Photosynthesis takes in CO_2, whose carbon can first enter glucose and later become part of starch.

Carbon Label Records

Question 5

Choice (2)

The distinct carbon label in A’s input also appears in its new sugar.

Question 6

B provides the usual carbon-13 fraction under the same growth conditions. Comparing A with B links the higher fraction in A to its enriched CO_2.

Question 7

Choice (3)

Of the net products shown, only glucose contains carbon.

Question 8

The fraction is described only as higher than usual. A higher fraction can still be less than 100 percent, and the table supplies no exact fraction.