Comparing Carbon From Equal-Mass Samples

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

Comparing Carbon From Equal-Mass Samples

Question 1

Choice (1)

The same mass divided by a smaller molar mass gives a larger amount. The samples contain 0.300 mol of acetic acid and 0.100 mol of glucose.

Question 2

Acetic acid gives 0.300 × 2 = 0.600 mol CO_2. Glucose gives 0.100 × 6 = 0.600 mol CO_2.

Question 3

Each glucose molecule contributes three times as many C atoms as each acetic acid molecule. The glucose sample has one third the molecular amount, yet both have the same total amount of carbon.

Question 4

The unknown is glucose because 18.0 g of glucose is 0.100 mol. Both candidates give 0.600 mol of carbon dioxide in the conversion model.