Checking How Much Salt a Hydrate Delivers

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

Checking How Much Salt a Hydrate Delivers

Question 1

Choice (2)

The lower molar mass of anhydrous $CuSO_4$ gives more formula units for the same mass. Each unit of either solid supplies one $CuSO_4$ unit.

Question 2

P contains 5.00/250 = 0.0200 mol of the hydrate. It leaves 0.0200 mol of $CuSO_4$, which has mass 0.0200 × 160 = 3.20 g.

Question 3

A pure sample would leave 8.00 × 160/250 = 5.12 g of $CuSO_4$. The observed 6.40 g is more, so the measured sample does not fit the pure pentahydrate model.

Question 4

The dried 6.40 g consists of $CuSO_4$. Dividing by 160 g/mol gives 0.0400 mol, which the original sample would deliver if completely dissolved.