Concentration and Reaction Rate Worksheet

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

Concentration and Reaction Rate

Question 1

Choice (3)

At a fixed volume, the greatest molarity gives the most moles of solute.

Question 2

The reactant particles are closer together on average and encounter their reaction partners more frequently. More successful collisions can occur per unit time.

Question 3

Choice (3)

Temperature can also affect reaction rate, so changing both factors confounds the comparison.

Question 4

Concentration is moles per volume. The smaller volume has a larger concentration for the same moles.

Comparing Initial Product Formation

Question 5

Choice (3)

R makes the largest amount of product in the same 2.0 s interval.

Question 6

1.5 mmol ÷ 2.0 s = 0.75 mmol/s.

Question 7

Choice (1)

The product increases from 0.8 to 1.5 to 2.1 mmol as X concentration increases.

Question 8

X concentration triples from P to R, but R produces 2.1 mmol in the time P produces 0.8 mmol. That ratio is about 2.6, less than three.