Catalysts and Activation Energy Worksheet

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

Catalysts and Activation Energy

Question 1

Choice (1)

A lower energy barrier makes successful collisions possible for a greater fraction of reactants.

Question 2

Net energy change depends on the difference between the product and reactant energy levels. Both endpoints are the same for the two paths.

Question 3

85 kJ/mol − 25 kJ/mol = 60 kJ/mol.

Question 4

Choice (3)

The catalyst lowers the threshold. A greater fraction of the same energy distribution can reach it.

Two Paths to the Same Products

Question 5

Choice (2)

Path B reaches a lower maximum from the same reactant energy level, so its forward activation energy is smaller.

Question 6

Path A gives 100 − 40 = 60 kJ/mol. Path B gives 70 − 40 = 30 kJ/mol.

Question 7

Choice (2)

Products minus reactants is 20 − 40 = −20 kJ/mol.

Question 8

Path B has the smaller barrier measured from the product energy level, 20 kJ/mol. The reverse barriers are 70 − 20 = 50 kJ/mol for B and 100 − 20 = 80 kJ/mol for A.