2023 Ch H1 Q5

Section: Chemistry in Society

Topic: Controlling the Rate

Question Summary

The graph shows how the rate of a reaction varies with concentration. What was the concentration (mol l^{-1}) when the reaction time was 10 s?
A: 0.04
B: 0.10
C: 0.25
D: 0.40

Worked Solution

The rate is given as 1/t (s^{-1}).
For a reaction time of 10 s: rate = 1/10 = 0.10 s^{-1}.
From the graph, a rate of 0.10 s^{-1} corresponds to a concentration of 0.25 mol l^{-1}.

Final Answer

C — 0.25 mol l^{-1}

Revision Tips

• Rate is often defined as 1/time for simple reactions.
• Always link the given time to rate before using the graph.
• Units: concentration in mol l^{-1}, rate in s^{-1}.