

Max. Marks: 12

Questions: 3

Q.1 Consider the given graph showing variation of reactant concentration with time. Three different reactions were started with identical initial concentration of reactants. Which of the following statement is correct?

The graph shows the concentration of R over time for three different conditions. The y-axis is labeled $[R]/\text{mol L}^{-1}$ and the x-axis is labeled t/s . All three curves start at the same initial concentration $[R]_0$ on the y-axis. Curve 1 is a straight line with a constant negative slope. Curve 2 is a curve that starts with a steeper negative slope than curve 1 but its slope decreases as time increases, eventually becoming less steep than curve 1. Curve 3 starts with the steepest negative slope but its slope decreases most rapidly, eventually becoming the least steep of the three curves.

- (1) The order of all the three reactions is same.
- (2) The rate constant of reaction 3 is larger than the rate constant of reaction 2 if the order of reaction is same for both.
- (3) The SI unit of rate constant of reaction 1 is s^{-1} .
- (4) Thermal decomposition of HI on gold surface is an example of reaction 2.

Scan or tap for the
full solution



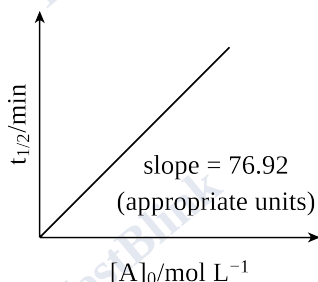
- Q.2** Half life of zero order reaction $A \longrightarrow \text{product}$ is 1 hour, when initial concentration of reactant is 2.0 mol L^{-1} . The time required to decrease concentration of A from 0.50 to 0.25 mol L^{-1} is :

(1) 0.5 hour (2) 15 min (3) 60 min (4) 4 hour

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Q.3 For the reaction $A \longrightarrow \text{products}$.



The concentration of A at 10 minutes is _____ $\times 10^{-3}$ mol L⁻¹ (nearest integer). The reaction was started with 2.5 mol L⁻¹ of A.

[JEE Main 2025 (Online) 2nd April Morning Shift]

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Section A (MCQ) — 2 questions

Ques.	1	2								
Ans.	2	2								

Section B (Numerical) — 1 question

Ques.	3					
Ans.	2435					