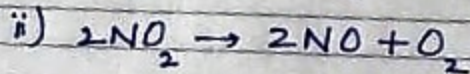
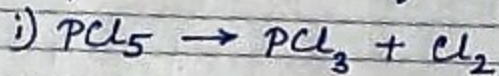


Part 1 Chemistry
Class 12

1. Express the rate of the following reactions -



2. Consider the following reaction which proceeds in a closed vessel, $3\text{X} \rightarrow 2\text{Y} + \text{Z}$

The rate of disappearance of X, $-\frac{\Delta[\text{X}]}{\Delta t}$ is found to be $0.075 \text{ mol L}^{-1} \text{ s}^{-1}$.

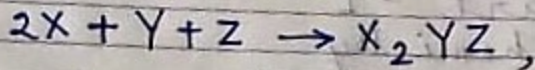
Calculate $\frac{\Delta[\text{Y}]}{\Delta t}$ and $\frac{\Delta[\text{Z}]}{\Delta t}$.

3. For the reaction $2\text{A} + \text{B} \rightarrow \text{A}_2\text{B}$, the rate = $k[\text{A}][\text{B}]^2$ with $k = 2 \times 10^{-6} \text{ M}^{-2} \text{ s}^{-1}$.

Calculate the initial rate of the reaction

Notes: when $[\text{A}] = 0.1 \text{ (M)}$, $[\text{B}] = 0.2 \text{ (M)}$.

4. For the reaction,



the rate equation is, $\text{Rate} = k[X][Y]^2$

with $k = 3 \times 10^{-6} \text{ mol}^{-2} \text{ L}^2 \text{ s}^{-1}$

If $[X] = 0.1 \text{ mol L}^{-1}$, $[Y] = 0.2 \text{ mol L}^{-1}$

and $[Z] = 0.7 \text{ mol L}^{-1}$, determine -

- i) initial rate of the reaction
- ii) the rate after 0.02 mole of X has been reaction

5. Give one example of fractional order reaction

6. When the rate of reaction is equal to the specific rate reaction?

7. Define half life of a reaction.