

Question 5. For a reaction  $A + B \rightarrow \text{Products}$ , the rate law is  $\text{Rate} = k[A][B]^{3/2}$ . Can the reaction be an elementary reaction? Explain.

Solution:

$$\text{Rate} = k[A][B]^{3/2}$$

$$\text{Order} = 1 + \frac{3}{2} = \frac{5}{2}$$

The order of elementary reaction cannot be fractional.