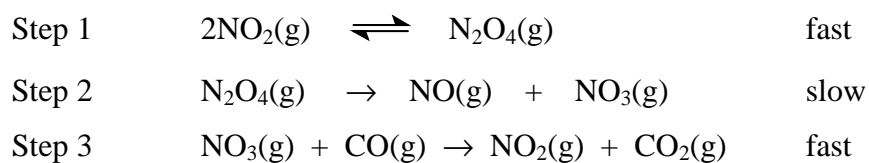


Marks
4

- Consider the reaction: $\text{NO}_2(\text{g}) + \text{CO}(\text{g}) \rightarrow \text{NO}(\text{g}) + \text{CO}_2(\text{g})$
The experimentally determined rate equation is: $\text{Rate} = k[\text{NO}_2(\text{g})]^2$
Show the rate expression is consistent with the following mechanism:



- The rate constant of a particular reaction quadruples when the temperature is increased from 30 °C to 50 °C. Calculate the activation energy, E_a , for this reaction.

2 $E_a =$