- Briefly explain the two factors necessary for a collision between two molecules to result in a reaction.

Marks 3

The molecules need to be orientated correctly and they need to have energy ≥ the activation energy, E_a for a reaction to occur.

Briefly describe the relationship between the rate of a reaction and the activation energy for the reaction.

The relationships between the activation energy, E_a, the temperature, T, and the rate constant, k, are summarised by the Arrhenius equation, $k = Ae^{-Ea/RT}$.

This shows that the higher the activation energy, the lower the rate constant and the lower the reaction rate.