QUESTION

Rate of a reaction can be expressed by Arrhenius equation as, $k = Ae^{-E/RT}$. In this equation, E represents:

A the energy above which all the colliding molecules will react

B the energy below which colliding molecules will not react

C the total energy of the reacting molecules at a temperature T

D the fraction of molecules with energy greater than the activation energy of the reaction

ANSWER :

Correct option is B)

E represents the energy of activation which implies it is the energy below which colliding molecules will not react

Arrhenius equation gives the dependence of the rate constant k of a chemical reaction on the absolute temperature T (in Kelvin), where A is the pre-exponential factor (or simply the prefactor), E_a is the activation energy, and R is the Universal gas constant:

By Arrhenius equation, $k = Ae^{\frac{-E_a}{RT}}$