

Q- The activation energy of a reaction is 9.0 Kcal/mol. The increase in the rate constant when its temperature is increased from 298 K to 308 K is.

- (A) 10% (B) 100% (C) 50% (D) 63%

Ans: (D) 63%

Explanation: $K = A e^{-E_a/RT} \Rightarrow \ln\left(\frac{K_2}{K_1}\right) = \frac{+E_a}{R} \left(\frac{1}{T_1} - \frac{1}{T_2}\right)$

$\Rightarrow \boxed{K_2 = 1.63 K_1}$