



CLASS 12 BATCH

FOR CHEMISTRY

LECTURE - 08

CHEMICAL KINETICS



Today's Goal



Energy Profile Diagrams Effects of Catalyst



Energy Profile Diagram



Graph for Zero E_a



Q The activation energy of reaction is equal to –

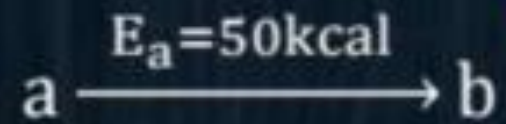


- A** Threshold energy for the reaction
- B** Threshold energy + Energy of the reactants
- C** Threshold energy – Energy of the reactants
- D** Threshold energy + Energy of the products

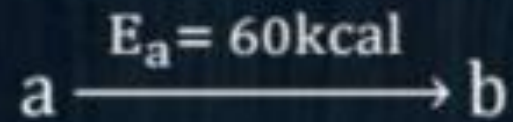




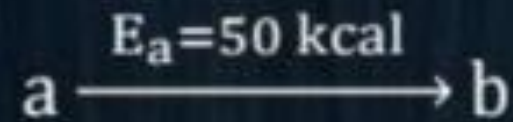
In which of the following E_a for backward reaction is greater than E_a for forward reaction ?



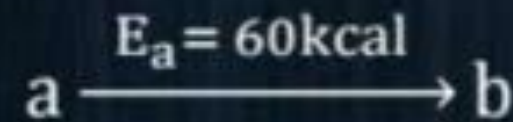
$$\Delta H = -10 \text{ kcal}$$



$$\Delta H = +30 \text{ kcal}$$



$$\Delta H = +10 \text{ kcal}$$

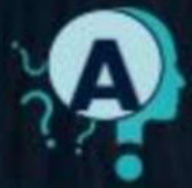


$$\Delta H = +20 \text{ kcal}$$





The chemical reactions in which reactants require high amount of activation energy are generally –



Slow



Fast



Instantaneous



Spontaneous





The activation energy of the reaction $A + B \rightarrow C + D + 38 \text{ k cal}$, What would be the activation energy of the reaction. $C + D \rightarrow A + B$



20 K cal



-20 K cal



18 K cal



58 K cal



The substance which can change the speed of reaction without itself undergo any permanent change in mass and composition at end of the reaction.



Energy profile Diagram





Which of the following explains the increase of the reaction rate by catalyst



Catalyst decreases the rate of backward reaction so that the rate of forward reaction increases



Catalyst provides extra energy to reacting molecules so that they may reduce effective collisions



Catalyst provides an alternative path of lower activation energy to the reactants



N.O.T





Calculate the ratio of catalyzed and uncatalyzed rate constant at 27°C if activation energy of a catalyzed rxn is 100 KJ and uncatalyzed rxn is 200 KJ.





THANK YOU !!

Homework

REVISE FORMULA OF LAST CHAPTER
DPP Of this Lecture

