Review Questions.

(03) When the temperature increase, the average kinetic energy of the molecules also increases. Then the Number of Collision between each molecules also increases. So, the number of Successfull COllision also increases. As a result of it the rate of the reaction increase.

Another reason is, when the temperature increase energy of the particles increases. So, the number of particles having energy greater than or equal to the activation energy increases. This Cause to increase the reaction rate.

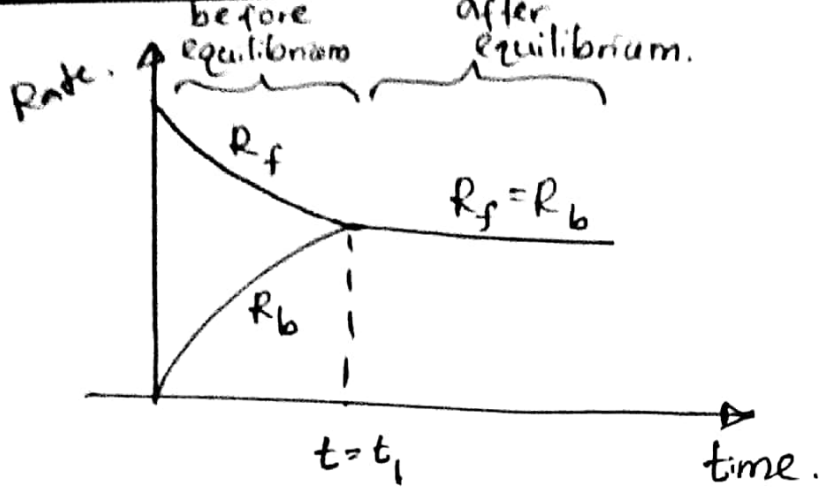
(27) $A + B \underset{R_b}{\overset{R_f}{\rightleftharpoons}} C + D$

- R_f - Forward reaction rate
- R_b - backward reaction rate

Let's get, there is only A and B initially in the System. Then A and B Starts to react and produces C and D. Since the initial Concentration of ~~A or~~ A and B are higher, the initial rate of forward reaction is higher, But with the time the Concentration of A and B are reducing. Accordingly the "R_f" also decreasing with time.

There is no C an D at $t=0$. But with the time, the Concentration of C and D increases. So, C and D Starts to react with each other and Produce A and B, This is happen initially at lower rate and with the time "R_b" will increase.

At Sometime later, R_f will be equat to R_b and remain Constant. This is called the equilibrium.



Paired Exercies.

(01)

(a). $kMnO_{4(s)} \rightleftharpoons K^+_{(aq)} + MnO^-_{4(aq)}$

(b). $CO_{2(s)} \rightleftharpoons CO_{2(g)}$

(13)

(a) $AgCl_{(s)} \rightleftharpoons Ag^+_{(aq)} + Cl^-_{(aq)}$

$K_{sp}\{AgCl\} = [Ag^+_{(aq)}][Cl^-_{aq)}]$

(b). $PbCrO_4$

$PbCrO_{4(s)} \rightleftharpoons Pb^{2+}_{(aq)} + CrO^-_{4(aq)}$

$K_{sp}\{PbCrO_4\} = [Pb^{2+}_{(aq)}][CrO^-_{4(aq)}]$

(c). $Zn(OH)_{2(s)} \rightleftharpoons Zn^{2+}_{aq)} + 2OH^-_{(aq)}$

$K_{sp}\{Zn(OH)_2\} = [Zn^{2+}_{(aq)}][OH^-_{(aq)}]^2$

(d). $Ca_3(PO_4)_{2(s)} \rightleftharpoons 3Ca^{2+}_{(aq)} + 2PO^{3-}_{4(aq)}$

$K_{sp}\{Ca_3(PO_4)_2\} = [Ca^{2+}_{(aq)}]^3[PO^{3-}_{4(aq)}]^2$

(IV). $H_2CO_{3(aq)} \rightleftharpoons H^+_{(aq)} + HCO_3^-{}_{(aq)}$

$NaHCO_{3(aq)} \longrightarrow Na^+_{(aq)} + HCO_3^-{}_{(aq)}$

When H^+ gets into blood stream, The HCO_3^- ions react with excess H^+ ions and produce H_2CO_3

$H^+_{(aq)} + HCO_3^-{}_{(aq)} \rightleftharpoons H_2CO_{3(aq)}$

$H_2CO_3 \rightleftharpoons CO_{2(g)} + H_2O$

Then the produced H_2CO_3 break into $CO_{2(g)}$ and H_2O. So the P^H of the blood Stream remain unchanged.