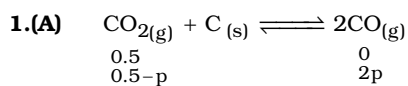


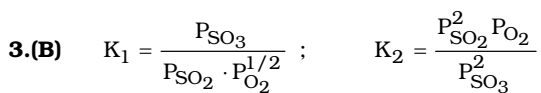
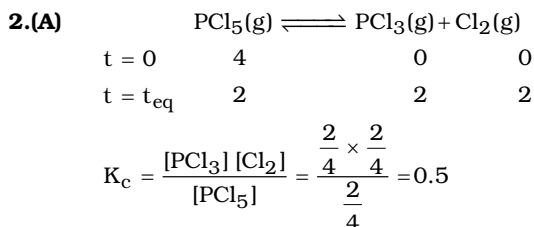
Daily Tutorial Sheet-1

Level-1

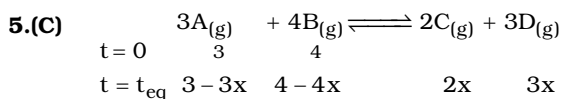


Now $0.5 - p + 2p = 0.8 \Rightarrow p = 0.3$

$$K_p = \frac{P_{\text{CO}}^2}{P_{\text{CO}_2}} = \frac{(2p)^2}{0.5 - p} = \frac{0.6^2}{0.2} = 1.8$$



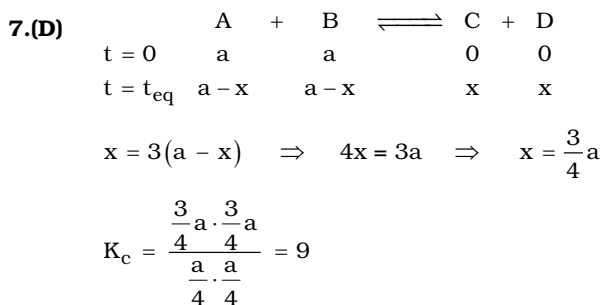
Hence $K_2 = \frac{1}{K_1^2}$ or $K_1^2 = \frac{1}{K_2}$



Now $2x = 1 \Rightarrow x = \frac{1}{2}$

$$K_c = \frac{(2x)^2 \cdot (3x)^3}{(3 - 3x)^3 (4 - 4x)^4} = \frac{1 \times \left(\frac{3}{2}\right)^3}{\left(\frac{3}{2}\right)^3 \times 2^4} = \frac{1}{2^4}$$

6.(C) Catalyst doesn't change value of equilibrium constant.



8.(D) $3\text{O}_2 \rightleftharpoons 2\text{O}_3$ is not a physical process.

9.(A) Value of equilibrium constant changes with temperature and stoichiometric coefficient of reaction only.

10.(C) Rate of forward reaction = rate of backward reaction.

11.(C) Equation III = Equation I + Equation II

Hence $K_3 = K_1 K_2$

12.(B) $K_p = K_c (RT)^{\Delta n_g}$ $K_p = K_c (RT)^{-1/2}$

13.(D) $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$

$t = 0$ 3 3 2

$t = t_{\text{eq}}$ 1.5 4.5 3.5

Hence $n_{\text{PCl}_3} = 4.5$

14.(A) $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$

Initial 1 2 0

at equim. 0.2 1.2 1.6

15.(A) Equilibrium constant changes with temperature only.