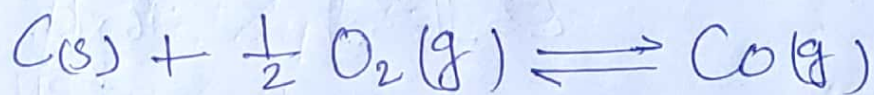


D. B. College (Jaynagar) Lect-9
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Ques $C(s) + \frac{1}{2} O_2(g) \rightleftharpoons CO(g)$
 $P_{initial} = 0.5 \text{ atm}$ $P_{eqm} = 0.8 \text{ atm}$
ii) $K_p = ?$



0.5

0.5 - x

2x

$$0.5 - x + 2x = 0.8$$

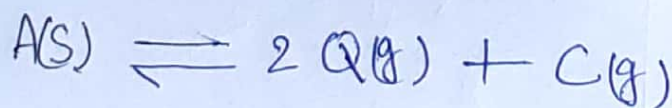
$$x = 0.3$$

$$P_{eqm} \quad 0.5 - 0.3 = 0.2 \quad 2 \times 0.3 = 0.6$$

$$K_p = \frac{(0.6)}{(0.2)^{\frac{1}{2}}}$$

Ques $A(s) \rightleftharpoons 2Q(g) + C(g)$

if $P_{eqm} = 1.2 \text{ atm}$ then find $K_p = ?$



2x x

$$2x + x = 1.2$$

$$x = 1.2$$

$$K_p = [2.4]^2 \times (1.2)$$

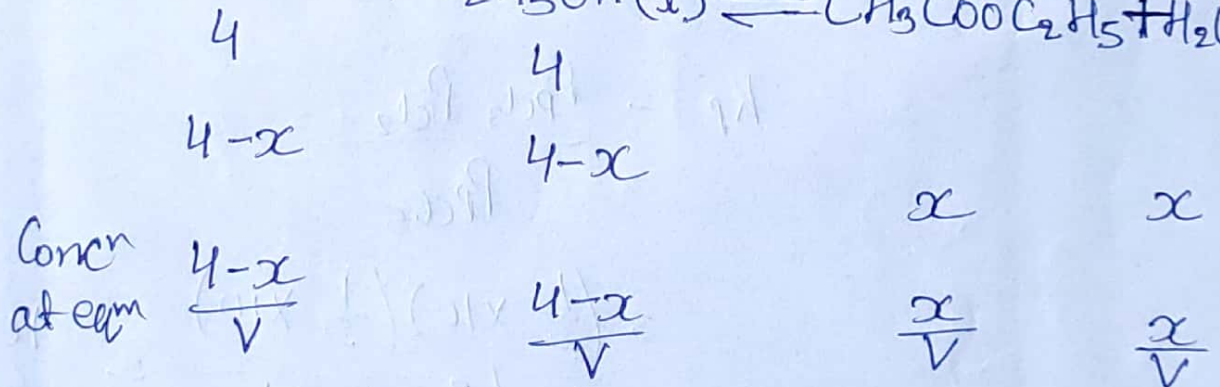
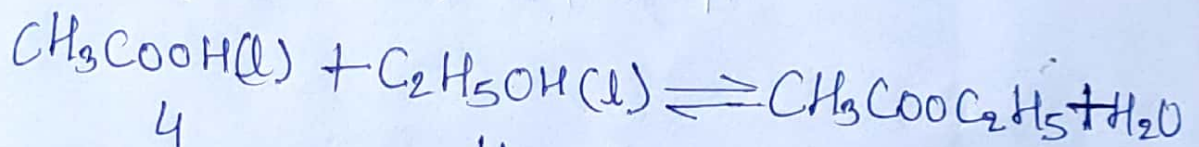
$$= 5.76 \times 1.2$$

$$= 6.912$$

$$\begin{array}{r} 2.4 \\ 2.4 \\ \hline 96 \\ 48 \\ \hline 576 \end{array}$$

$$\begin{array}{r} 576 \\ 1.2 \\ \hline 1152 \\ 576 \times \\ \hline 6912 \end{array}$$

Ques $\text{CH}_3\text{COOH}(\text{l}) + \text{C}_2\text{H}_5\text{OH}(\text{l}) \rightleftharpoons \text{CH}_3\text{COOC}_2\text{H}_5(\text{l}) + \text{H}_2\text{O}(\text{l})$
Initially 4 moles of each of CH_3COOH & $\text{C}_2\text{H}_5\text{OH}$ is taken. Find degree of dissociation for each if $K_c = 4$.



$$4 = K_c = \frac{\frac{x}{V} \times \frac{x}{V}}{\frac{4-x}{V} \times \frac{4-x}{V}}$$

$$4 = \frac{x^2}{(4-x)^2}$$

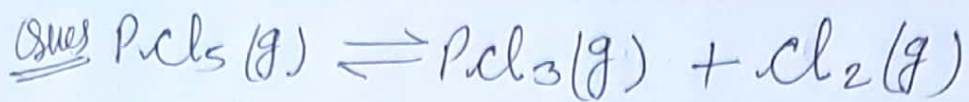
$$2 = \frac{x}{4-x}$$

$$8 - 2x = 8$$

$$8 = 3x$$

$$x = \frac{8}{3}$$

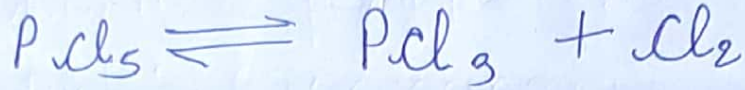
$$\begin{aligned} \text{DOD.} &= \frac{8/3}{4} \\ &= \frac{8}{3 \times 4} \\ &= \frac{2}{3} \end{aligned}$$



Initial moles of $\text{Pcl}_5 = 4$

total moles at eqm = 5

If total Pr. at eqm = 10 atm then find K_p



4

$4-x$

x

x

= 3

= 1

= 1

$$4-x+x+x=5$$

$$K_p = \frac{P_{\text{Pcl}_3} P_{\text{Cl}_2}}{P_{\text{Pcl}_5}}$$

$$= \frac{\left(\frac{1}{5} \times 10\right) \left(\frac{1}{5} \times 10\right)}{\left(\frac{3}{5} \times 10\right)} = \frac{10 \times 2}{5 \times 3}$$

$$= \frac{2}{3}$$