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If initial moles of A is 10 & 40% dissociation of A takes place at eqm then find
 ① total moles at eqm ② moles of B & C at eqm



10

 $a-x$ x $\frac{2x}{3}$ $10 - 4 = 6$

$$4\phi = \frac{x}{10} \times 10\phi = \frac{4}{3}$$

$$= \frac{2}{3} \times 4 = \frac{8}{3}$$

$$x = 4$$

$$\text{① } 6 + \frac{4}{3} + \frac{8}{3} = \frac{18 + 4 + 8}{3} = \frac{30}{3} = 10$$

$$\text{② } B \rightarrow \frac{4}{3}$$

$$\text{③ } C \rightarrow \frac{8}{3}$$



If initial moles of A is given 10 & total moles at eqm 30 then find. DOD



10

$$= a-x \quad 3x \quad 2x$$

$$= 10-x = 10-5$$

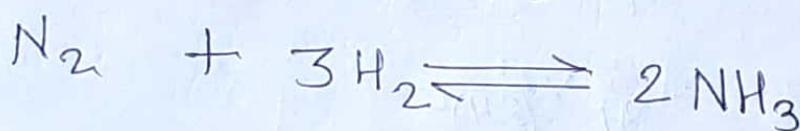
$$\Rightarrow 10-x+3x+2x = 30$$

$$10 + 4x = 30$$

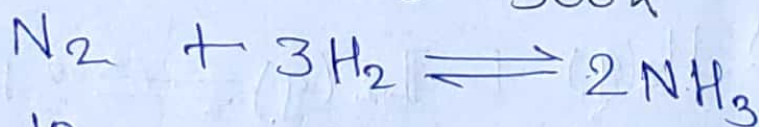
$$x = \frac{20}{4} = 5$$

$$D.O.D = \frac{5}{10} = \frac{1}{2}$$

Ques



10 moles of N_2 & 20 moles of H_2 is taken initially in a container of volume 6L. If 40% dissociation of N_2 takes place then. Find K_c & K_p at 300K



10 20

$10-x$ $20-3x$ $2x$

$10-4=6$ $20-3 \times 4$ $2 \times 4=8$

$$4\phi = \frac{x}{1\phi} \times 1\phi\phi = 18$$

$$x = 4$$

$$[N_2] = \frac{6}{6} = 1$$

$$[NH_3] = \frac{8}{6}$$

$$[H_2] = \frac{8}{6}$$

$$K_c = \frac{[4/3]^2}{[1][4/3]^3} = \frac{16}{9} \cdot \frac{27}{1 \times 64} = \frac{16 \times 27}{9 \times 64} = \frac{3}{4}$$

$$K_p = K_c (RT)^{\Delta n_g} = \frac{3}{4}$$

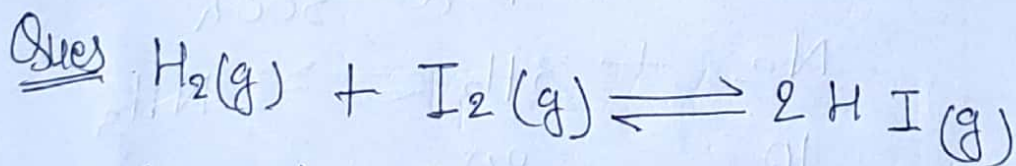
$$= \frac{3}{4} (0.08 \times 300)^{-2} \quad \left| \quad \Delta n_g = -2 \right.$$

$$= \frac{3}{4} (24)^{-2}$$

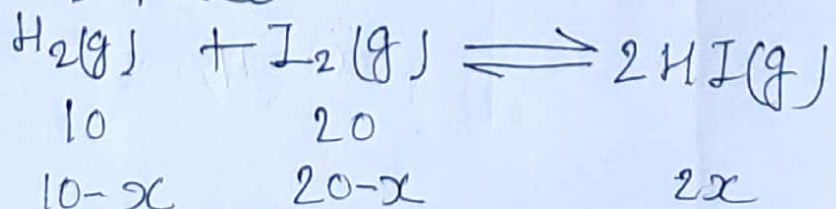
$$= \frac{3}{4} \times \frac{1}{(24)^2}$$

$$= \frac{3}{4} \times 576 = \frac{3}{2304}$$

$$K_p = \frac{1}{768}$$



10 moles of H_2 & 20 moles of I_2 is taken initially in a container of volume 5L and K_c & K_p for reach if 40% dissociation of H_2 takes place.



$$10 - 4 = 20 - 4 \quad 2 \times 4 = 8$$

$$= 6 \quad \dots = 16$$

$$40 = \frac{x}{10} \times 100$$

$$x = 4$$

at eqm $\frac{n}{V} \quad \frac{6}{5} \quad \frac{16}{5} \quad \frac{8}{5}$

$$K_c = \frac{\left[\frac{8}{5}\right]^2}{\left[\frac{6}{5}\right]\left[\frac{16}{5}\right]} = \frac{\frac{64}{25}}{\frac{16 \times 6}{25}} = \frac{64^2}{16 \times 6}$$

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

$$K_p = \frac{2}{3} (RT)^0$$

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