Nishant Jindal

Ionic equilibrium	Class Notes	Tuesday, 28 November 2023
	Live Class For Doubts	Wednesday, 29 November 2023
	O-I: 1, 3, 7, 10, 12, 14, 16, 17, 18, 20, 21, 23, 26, 27, 28, 32, 35, 37, 38, 42, 44, 49, 52, 54, 55, 58, 60, 61, 45, 66, 68, 70, 72, 75, 77, 78, 79, 50, 84, 85, 86, 90, 93, 94, 96, 98	Thursday, 30 November 2023
		Friday, 1 December 2023
Equilibrium	JEE MAIN Selected PYQs	Saturday, 2 December 2023
Redox		Sunday, 3 December 2023
	Class Notes	Monday, 4 December 2023
	O-I: 5, 6, 7, 8, 9, 10, 18, 19, 20, 21, 29, 30, 31, 32, 35, 37, 39, 40, 43, 45, 46, 48, 50, 52, 55, 57	Tuesday, 5 December 2023
	Live Class For Doubts	Wednesday, 6 December 2023
Electrochemistry	Class Notes	Thursday, 7 December 2023
	O-I: 2, 3, 8, 10, 13, 16, 17, 18, 21, 25, 26, 32, 32, 35, 36, 40, 43, 45, 47, 49, 51, 54, 56, 60, 62, 64, 65, 67, 70, 72, 73, 74, 75 77, 78, 79, 82, 84, 87, 88, 89	Friday, 8 December 2023
	JEE MAIN Selected PYQs	Saturday, 9 December 2023
		Sunday, 10 December 2023
Kinetics	Class Notes	Monday, 11 December 2023
	O-I: 3, 4, 6, 8, 9, 14, 15, 20, 23, 25, 28, 29, 31, 32, 33, 38, 40, 43, 45, 48, 50, 52, 54, 56, 57, 56, 61, 64, 65, 68, 70, 71	Tuesday, 12 December 2023
	Live Class For Doubts	Wednesday, 13 December 2023
	JEE MAIN Selected PYQs	Thursday, 14 December 2023
liquid solution	Class Notes	Friday, 15 December 2023
	O-I:2, 3, 5, 7, 15, 18, 19, 21, 22, 24, 26, 29, 32, 33, 37, 40, 44, 46, 49, 51, 53, 57, 58, 64, 66, 67, 68, 71, 73, 75, 77, 79	Saturday, 16 December 2023
		Sunday, 17 December 2023
	JEE MAIN Selected PYQs	Monday, 18 December 2023
Atomic Structure	Class Notes	Tuesday, 19 December 2023
	Live Class For Doubts	Wednesday, 20 December 2023
	O-I: 2, 4, 7, 9, 11, 14, 15, 18, 19, 25, 27, 28, 31, 33, 34, 37, 40, 42, 46, 47, 50, 51, 54, 58, 60, 61, 63, 64, 66, 67	Thursday, 21 December 2023
	JEE MAIN Selected PYQs	Friday, 22 December 2023

$$2X^- + Y_2 \longrightarrow X_2 + 2Y^-$$

(36)

$$E_{Y^-/Y_2} < E_{X^-/X_2}$$

$$E_{X_2/X^-} < E_{Y_2/Y^-}$$

(32) $pH = 0 \quad [H^+] = 1 \quad E^\circ = 0$

$$2H^+ + 2e^- \longrightarrow H_2$$

$$E_{H^+/H_2} = 0 - \frac{0.06}{2} \log \frac{1}{[H^+]^2}$$

$$= -0.06 \times 7.$$

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(42) $E = 0 - \frac{0.06}{2} \log \frac{[Zn^{2+}]_a}{[Zn^{2+}]_c}$

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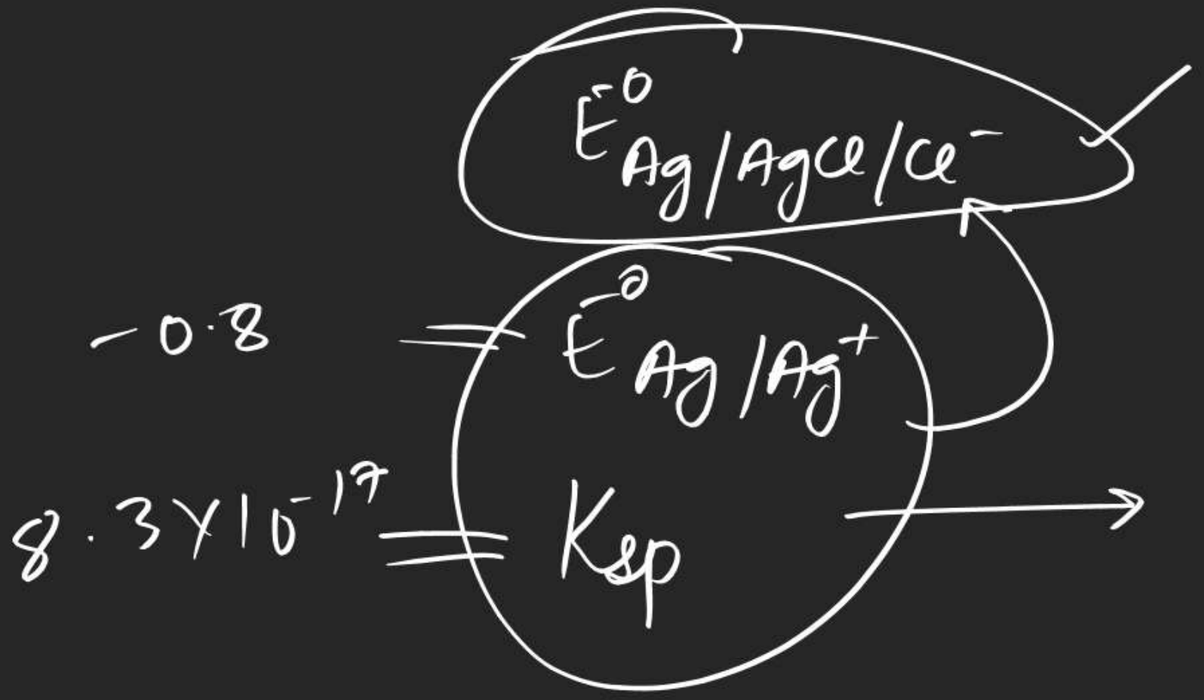


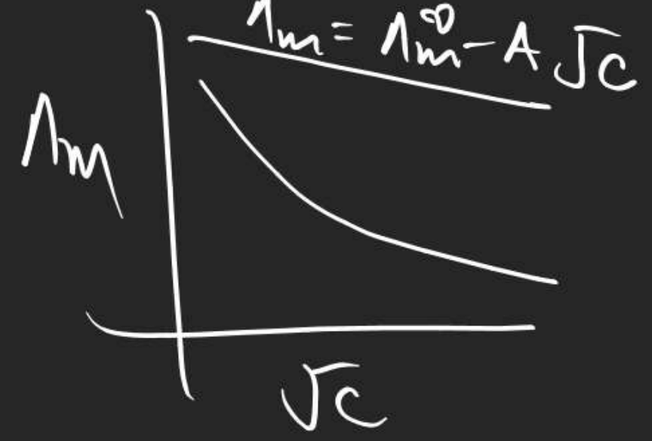
$$\Lambda_m = \frac{K \times 1000}{M}$$

$Scm^2 mol^{-1}$

$Sm^2 mol^{-1}$

$$-\eta FE = \Delta G = \Delta H - T\Delta S$$

$$\eta F\left(\frac{dE}{dT}\right) = \Delta S$$



$$= \frac{\Delta G}{\Delta H} \times 100$$

$$\frac{112}{22400} = n_{H_2}$$

$$= \left| \frac{-nFE}{\Delta H} \right| \times 100$$

$$\frac{2 \times 112}{22400} = \text{eq g } H_2$$

$\overset{(-4)}{CH_4} \longrightarrow \overset{(+4)}{CO_3^{2-}}$

$n \times 8$

$n \times 8 = \dfrac{80 \times 0.96 \times 60 \times 60}{96500}$

CH_3COONa

$M = \dfrac{0.015}{2}$

$K = 6.3 \times 10^{-4}\ S\,cm^{-1}$

$\Lambda_m = \dfrac{1000 \times K}{M}$

$K_a = \dfrac{c\alpha^2}{1-\alpha}$

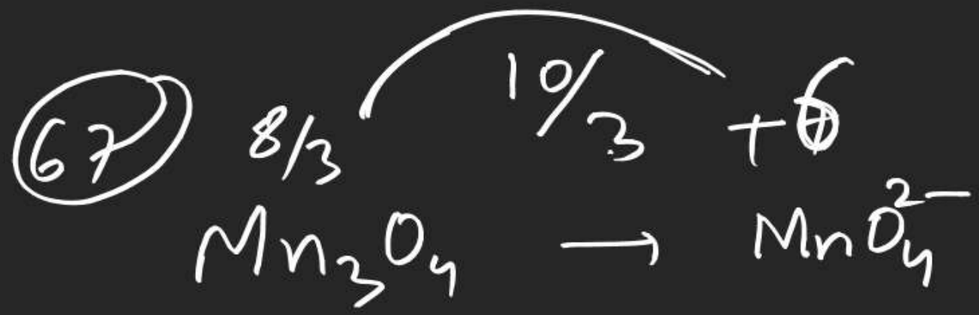
$\Lambda_m = \alpha \Lambda_m^{\infty}$

$\Lambda_m = \dfrac{K \cdot}{1000 \times M}$

$$\Lambda_m^\infty = \Lambda_{eq}^\infty \times n\text{-factor}$$

$$\Lambda_m^\infty = \frac{k}{1000 \times S}$$

(67)



$$n_f = 3 \times 10/3$$

$$= 10$$

1 mol

$= 10$ eq

(5) $t_{1/2} = 3.33 = \frac{\ln 2}{k}$

$-kt = \ln \frac{[A]_t}{[A]_0}$

$-k \times q = \ln f$

(5) $c_1 < c_2$

$C \uparrow \quad K \uparrow \quad \Lambda_m \downarrow$

(12) $\Lambda_m^\infty (CH_3COOH)$

$\Lambda_m^\infty (KCl)$

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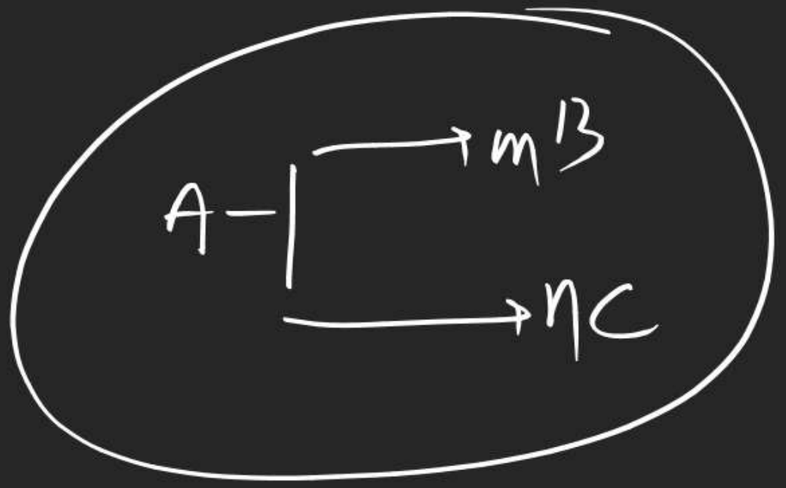
$$-\frac{d[A]}{dt} \qquad \frac{d[B]}{dt}$$

$$t_{3/4} = t_{1/2} + t'_{1/2}$$

$$-kt = \ln \frac{[A]_t}{[A]_0}$$

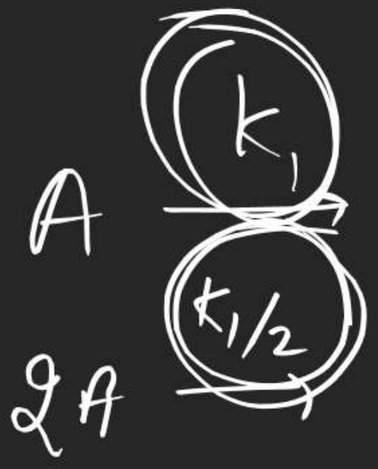
fraction remaining

$$t_{1/2} \propto \frac{1}{a_0^{n-1}}$$



$$[B] = \frac{k_1}{k_1+k_2} \times x \times m$$

$$[C] = \frac{k_2}{k_1+k_2} \times x \times n$$



$$k_A = \frac{k_1}{1}$$

$$\frac{k_A}{2} = \frac{k_1}{2}$$

$$aA \longrightarrow bB$$

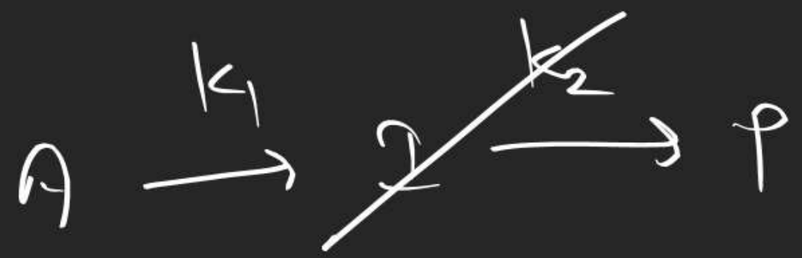
$$\frac{k_A}{a} = \frac{k_B}{b}$$

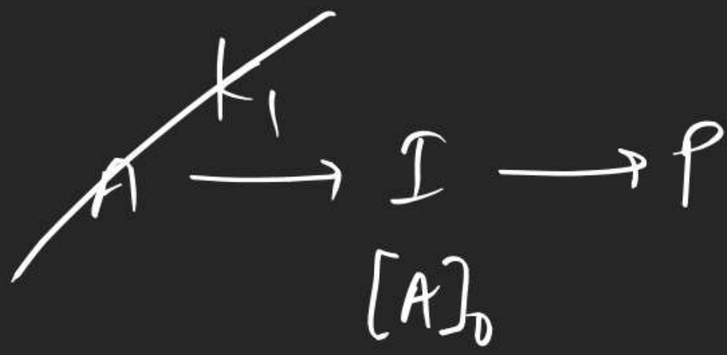
$$[A]_t = [A]_0 e^{-k_1 t}$$

$$[I]_t = \frac{k_1}{k_2 - k_1} [A]_0 \left\{ e^{-k_1 t} - e^{-k_2 t} \right\}$$

$$\ln \frac{x_e}{x_e - x} = (k_f + k_b) t$$

$$[P] = [A]_0 - [A]_t - [I]_t$$





$$A \longrightarrow P$$

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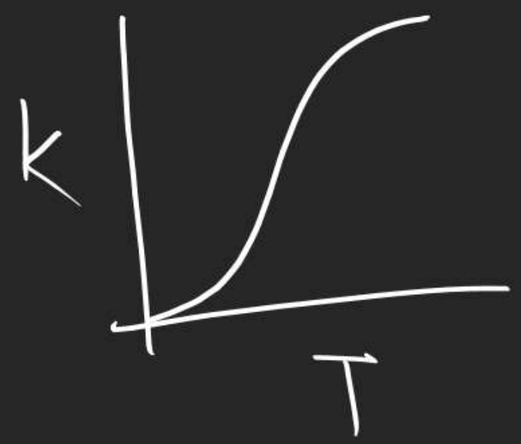
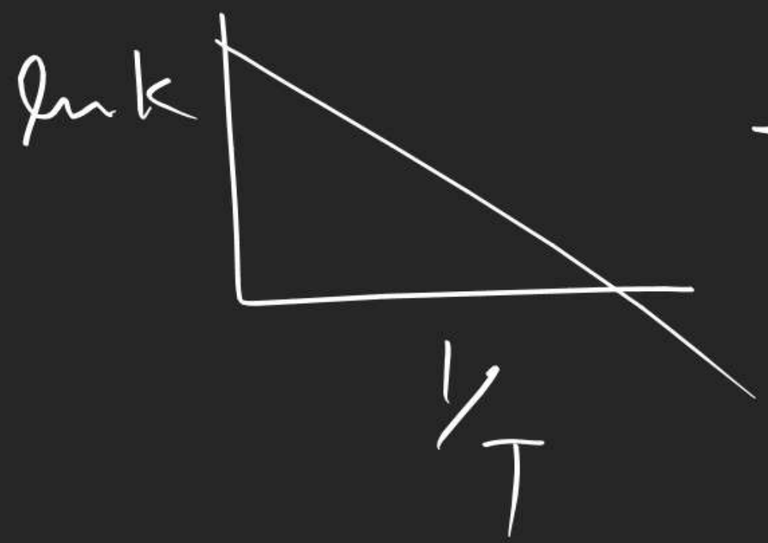
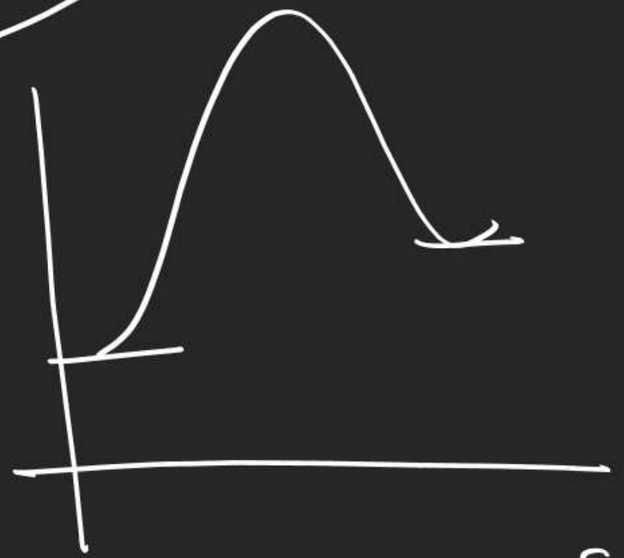
$$\ln \frac{k_2}{k_1} = \frac{E_a}{R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

$$k = A e^{-E_a/RT}$$

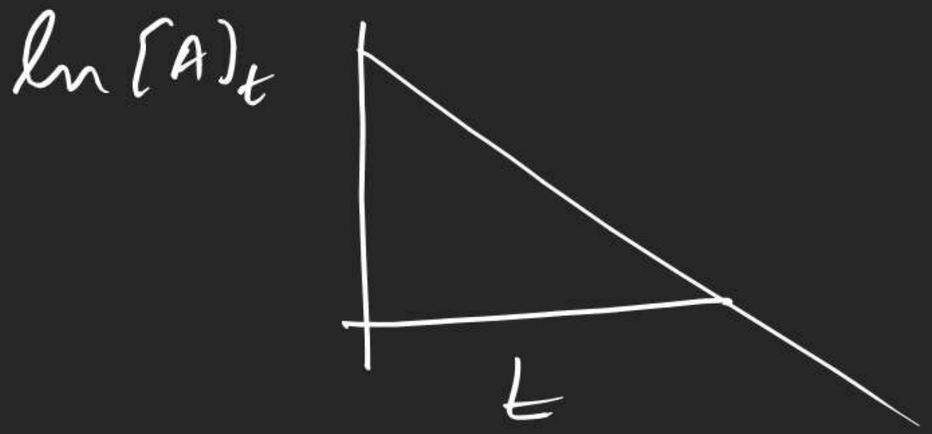
$e^{-E_a/RT}$







rate $= Z_{12} \times e^{-E_a/RT} \times P$



(28) 1 M

$$k = \frac{1}{20} \ln \frac{0.2}{1}$$

~~$\log t_{1/2}$~~ = ~~$\log \frac{1}{[A]_0}$~~

(31) $\log(a-x) - \log a = \left(\frac{1}{2.303}\right) kt$

slope $= -\frac{k}{2.303}$

$$A \longrightarrow 2B + C$$

$(P_A)_0$ 0 0

$$(P_A)_0 - x + 2x + x = 176$$

$$0 + 2(P_A)_0 + (P_A)_0 = 270$$

$$k = \frac{1}{t} \ln \frac{(P_A)_0}{(P_A)_0 - x}$$

(65) $(E_a)_A > (E_a)_B$

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$$\frac{\Lambda_m}{\Lambda_m^\infty} = \alpha$$

$$\Lambda_m^\infty = \frac{K \times 1000}{S}$$

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Topic	Task	Date
Thermodynamics-1	Class Notes	Thursday, 9 November 2023
	O-I: 6, 10, 14, 20, 23, 24, 30, 31, 34, 36, 38, 42, 44, 46, 50, 52	Friday, 10 November 2023
	S-I: 1, 2, 12, 17, 20, 28, 31, 34, 38, 42	Saturday, 11 November 2023
		Sunday, 12 November 2023
Thermodynamics-2	Class Notes	Monday, 13 November 2023
	O-I: 1, 2, 5, 9, 11, 13, 17, 21, 24, 25, 26, 27, 28, 30, 32, 35, 39, 42, 43, 47, 48, 49, 50	Tuesday, 14 November 2023
Thermochemistry	Class Notes	Wednesday, 15 November 2023
	O-I: 2, 5, 8, 10, 14, 17, 18, 20, 2, 22, 23, 25, 26, 27, 28, 29, 32	Thursday, 16 November 2023
Thermodynamics & Thermochemistry	JEE MAIN Selected PYQs	Friday, 17 November 2023
Mole Concept	Class Notes	Saturday, 18 November 2023
		Sunday, 19 November 2023
	O-I : 3, 9, 12, 19, 21, 25, 34, 38, 40, 43, 45, 48, 51, 52, 53, 55, 58	Monday, 20 November 2023
Concentration Terms	Class Notes	Tuesday, 21 November 2023
	Live Class For Doubts	Wednesday, 22 November 2023
	O-I : 2, 6, 8, 11, 12, 14, 15, 17, 22, 25, 26, 28, 29, 31, 32, 34, 36 **O-II** : 17-24	Thursday, 23 November 2023
	JEE MAIN Selected PYQs	Friday, 24 November 2023
Chemical equilibrium	Class Notes	Saturday, 25 November 2023
		Sunday, 26 November 2023
	O-I: 3, 5, 10, 18, 21, 23, 27, 29, 30, 32, 35, 36, 38, 42, 44, 45, 46, 51, 55, 58, 59, 60, 62, 67, 69, 72, 74, 75, 76, 78	Monday, 27 November 2023