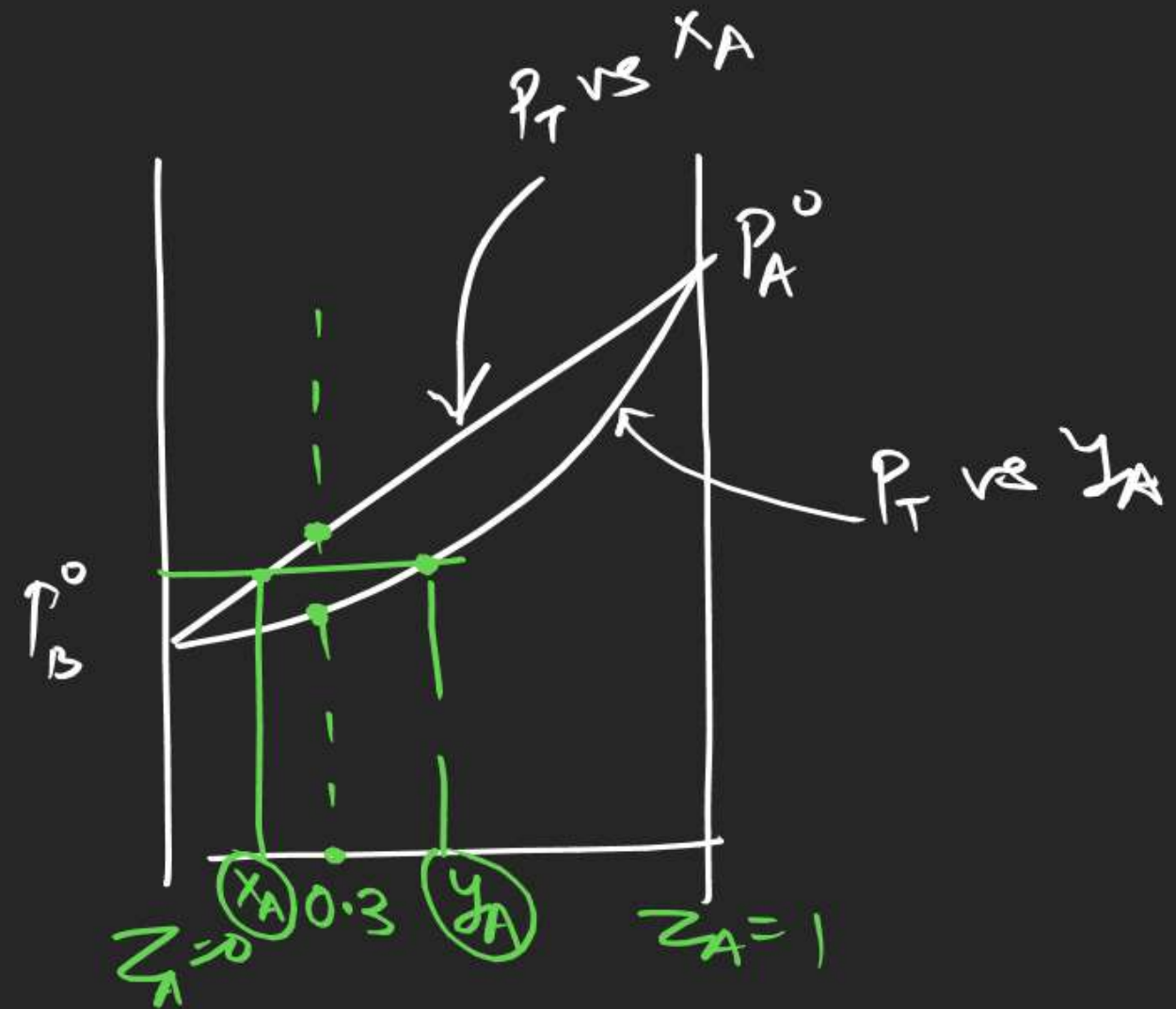
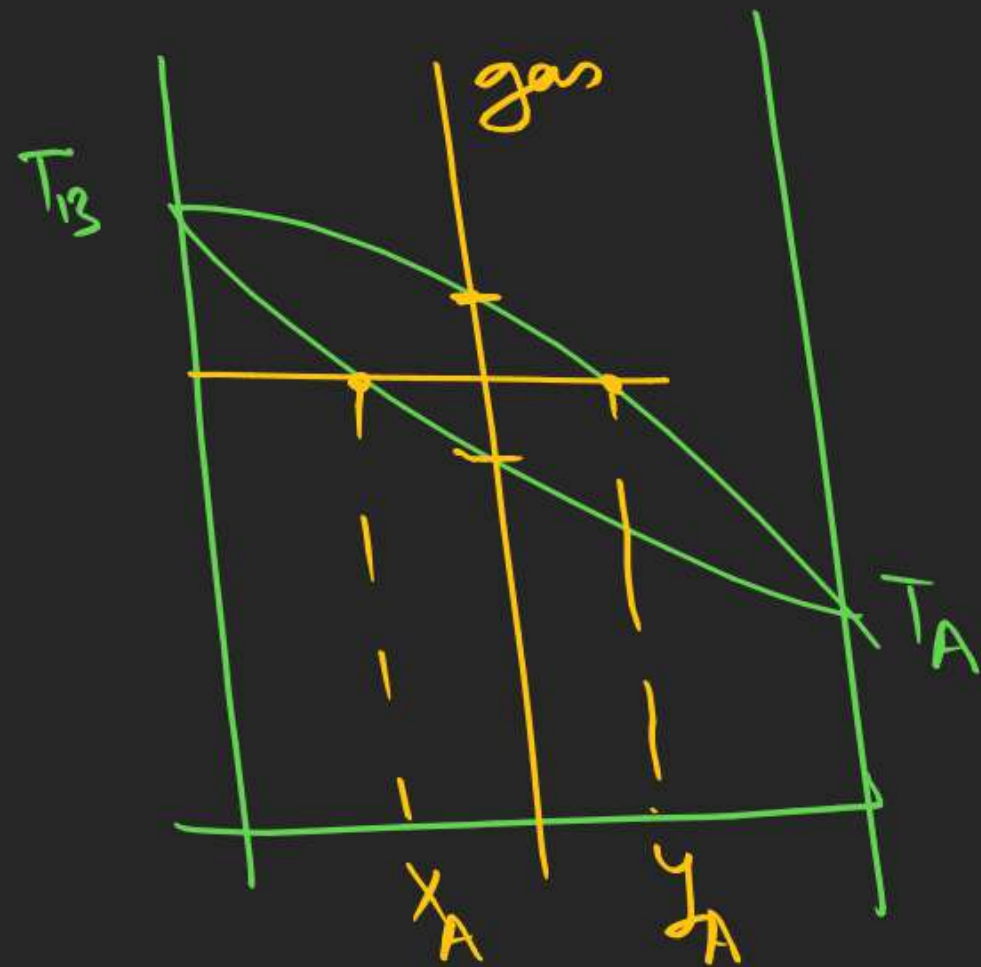


Topic	Task	Date
Thermodynamics-1	Class Notes	Thursday, 9 November 2023
	O-I: 6, 10, 14, 20, 23, 24, 30, 31, 34, 36, 38, 42, 44, 46, 50, 52	Friday, 10 November 2023
	S-I: 1, 2, 12, 17, 20, 28, 31, 34, 38, 42	Saturday, 11 November 2023
		Sunday, 12 November 2023
Thermodynamics-2	Class Notes	Monday, 13 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

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

$$P_A = X_A P_A^0 = y_A P_T$$

$$P_B = X_B P_B^0 = y_B P_T$$



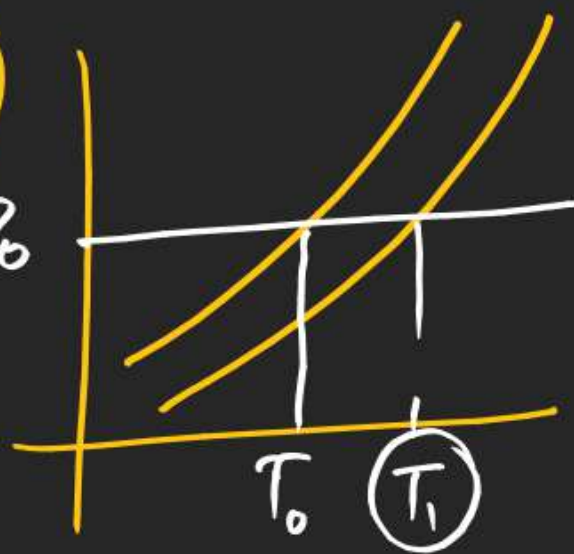
$$\frac{P_0 - P_s}{P_0} = \chi_{\text{solvent}} \left(\frac{n \times i}{n_1 + n} \right)_{P_0}$$

$$\Delta T_b = K_b \times m \times i$$

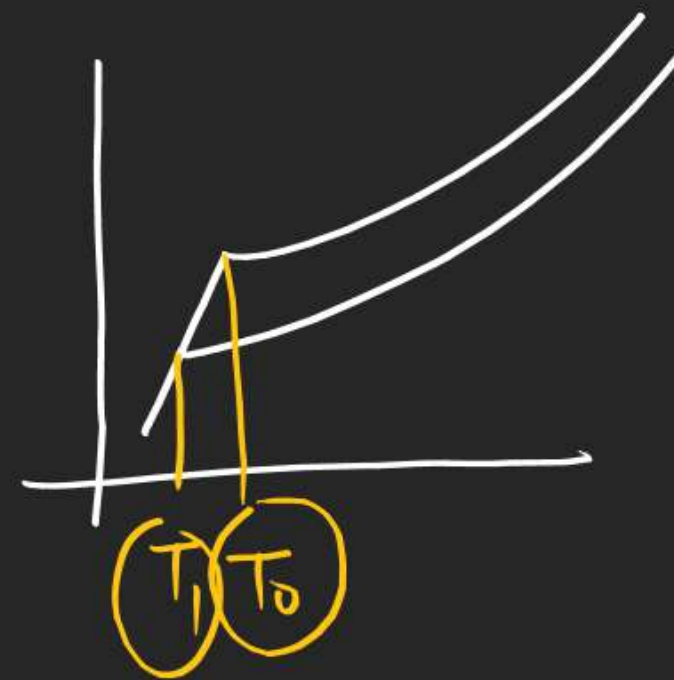
$$\Delta T_f = K_f \times m \times i$$

$$\pi = CRT \times i$$

$$\pi = h \rho g$$



$$K_b = \frac{RT_0^2}{1000 L_v}$$



$$i = 1 + (n-1)\alpha$$



$$n = n_1 + n_2$$

ideal

$$\Delta H_{mix} = 0$$

$$\Delta V_{mix} = 0$$

$$\Delta S_{mix} > 0$$

$$\Delta S_{sur} = 0$$

$$\Delta G_{mix} < 0$$

-ive

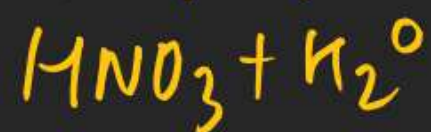
$$< 0$$

$$< 0$$

$$> 0$$

$$> 0$$

$$< 0$$



phenol + aniline

CH₄ + acetone

+ive

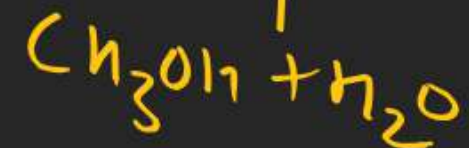
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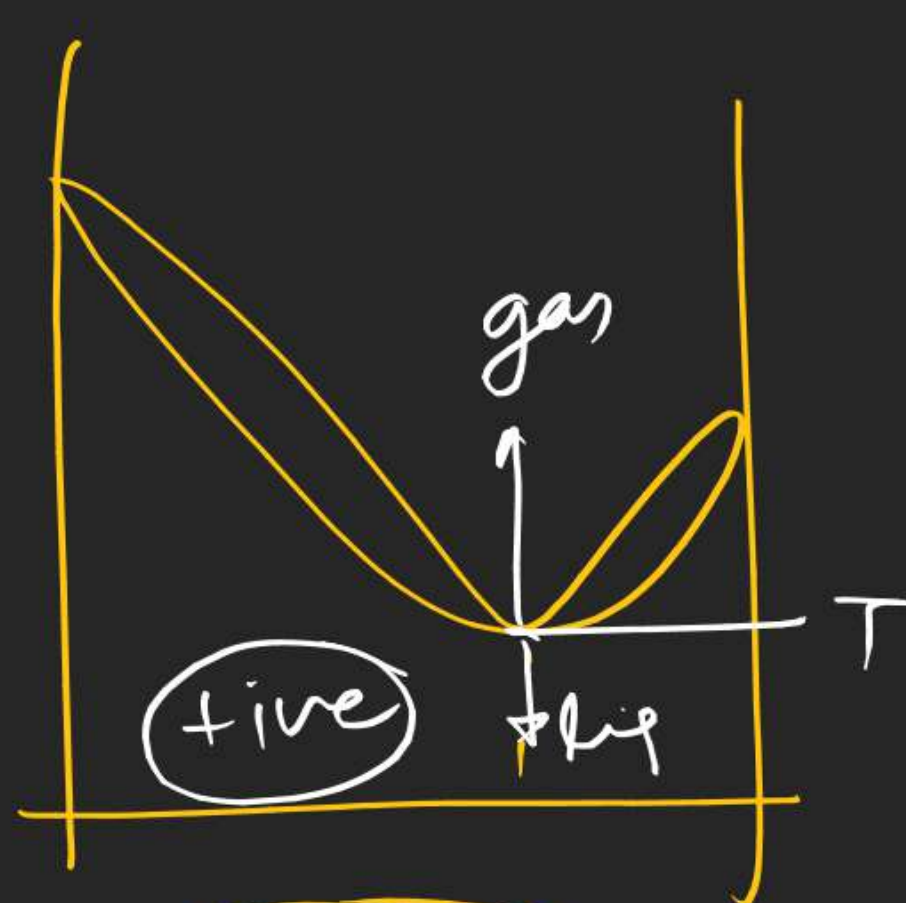
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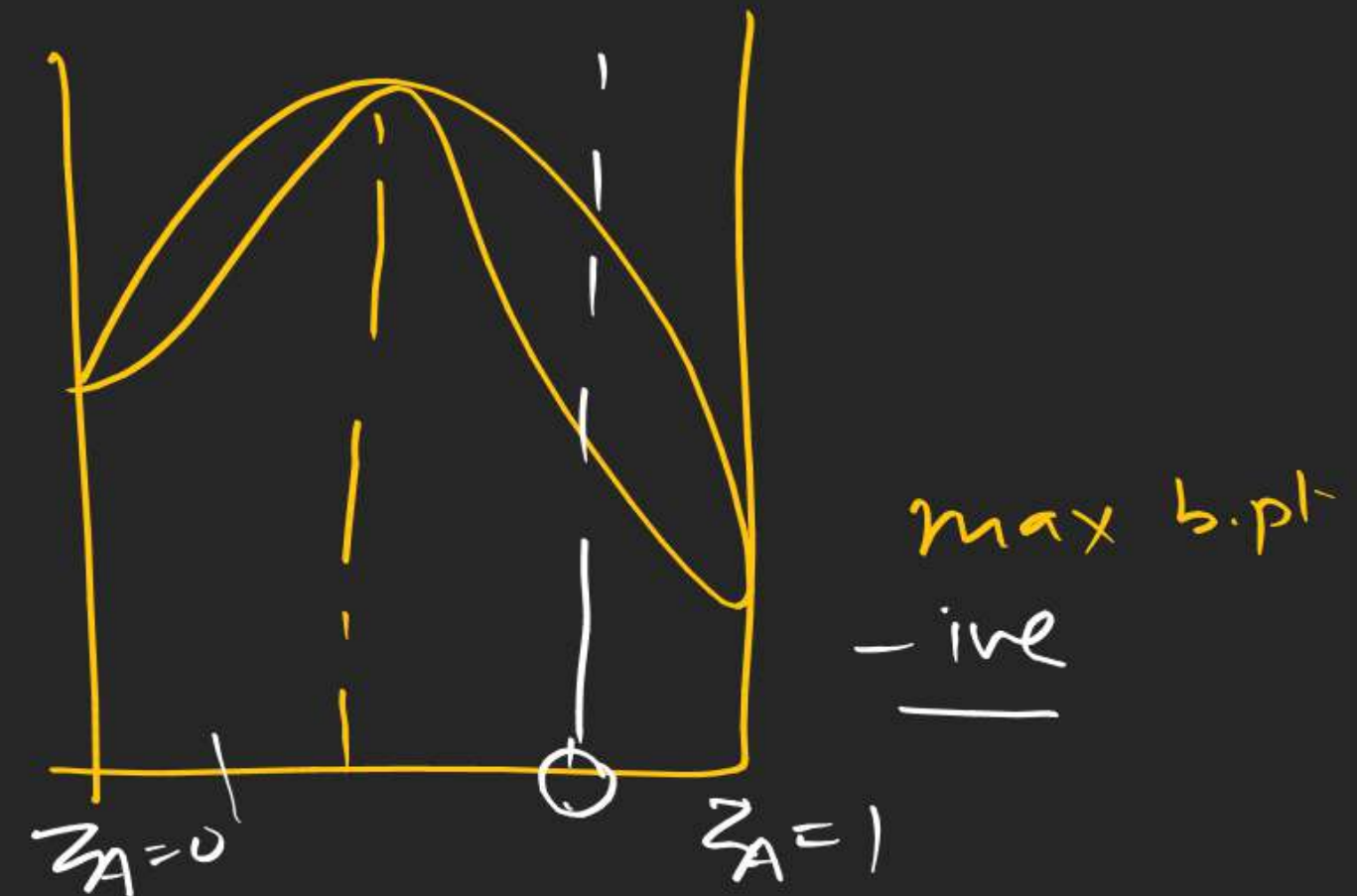
$$< 0$$

C₆H₆ + acetone



min b.pt

$$\begin{aligned} y_A &= x_A \\ y_B &= x_B \end{aligned}$$



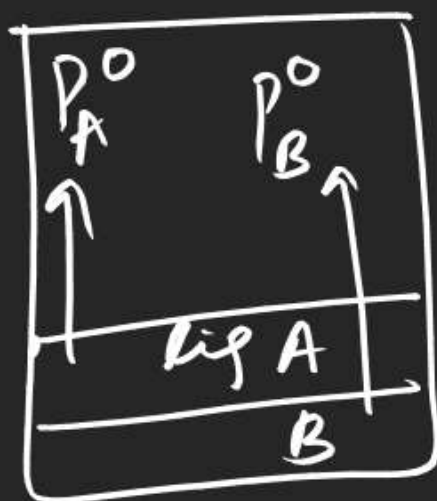
$$P = K_H \alpha$$

$$\begin{aligned}
 (19) \quad P_T &= x_A P_A^0 + x_B P_B^0 \\
 &= (1 - x_B) P_A^0 + x_B P_B^0 \\
 &= P_A^0 + x_B (P_B^0 - P_A^0)
 \end{aligned}$$

$$(33) \quad \Delta T_f = k_f \times m$$

$$\Delta T_b = k_b \times \frac{m}{2}$$

(22)



(29)

$$\frac{P_0 - P_s}{P_s} = \frac{n}{N} = \frac{1/M_B}{20/M_A} = \frac{10-9}{9}$$

(32)

$$\text{Molarity} = 1$$

$$m = \frac{1}{1020} \times 1000$$

$$1000 \text{ ml} \longrightarrow 1 \text{ mol}$$

$$1200 \text{ gm sol}^n \longrightarrow 1 \times 180 \text{ gm}$$

$$W_{\text{solvent}} = 1020$$



$i = 1 + \left(\frac{1}{n} - 1\right) \alpha$

(57)



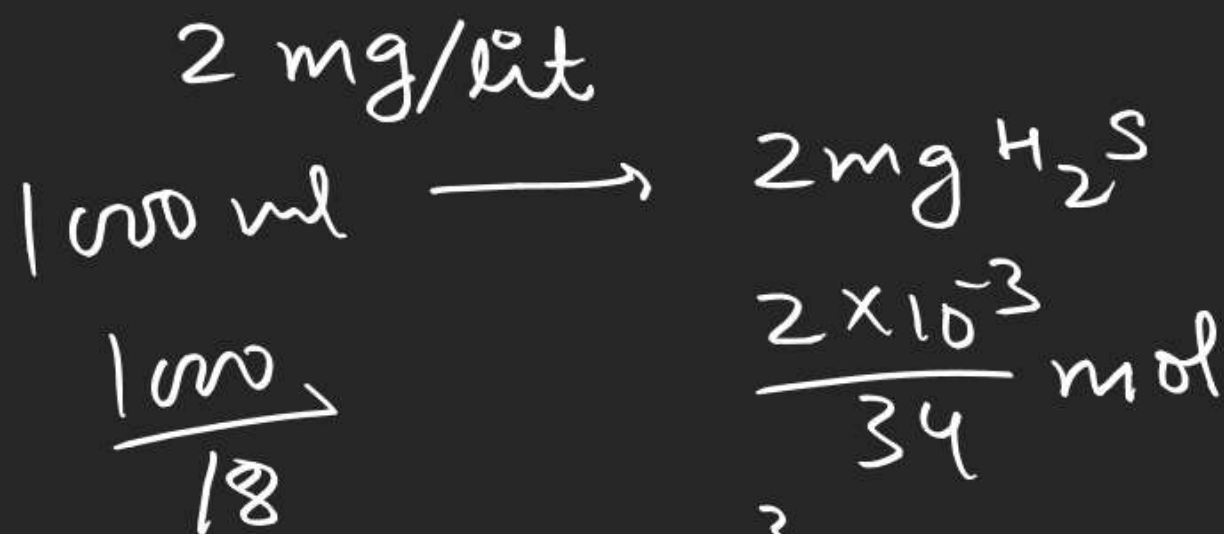
0.1
0

0.1
0

X

$\frac{0.2}{2} = 0.1$

(79)



$\alpha = \frac{\frac{2 \times 10^{-3}}{34}}{\frac{1000}{18}}$

$\rho = \frac{6.8 \times 10^3 \times 10^2 \times 2 \times 10^3}{34 \times 1000} \times 18$

$i = 1 + (n-1) \alpha$

$$(5) \quad 0.6 = 5 \times \frac{3/M}{100} \times 1000$$

$$(4) \quad P_s = P_{0/2} = 23.76/2$$

$$\frac{P_0 - P_s}{23.76} = \frac{\eta}{100/18}$$

$$(6) \quad \Delta T_f = 4 = 1.86 \times \frac{750}{W} \times 1000$$

$$(9) \quad 2A \longrightarrow A_2$$

$$2 = 5 \times \frac{W/122}{30} \times 1000 \times \left[1 + \left(\frac{1}{2} - 1 \right)^n \right]$$

$$\underline{\underline{\alpha = 0.8}}$$

⑥

1000 gm solⁿ

$$1000 \text{ gm solvent} \longrightarrow 0.75 \text{ Sucrose}$$

$$0.75 \times 342 = 256.5 \text{ gm}$$

$$W_{\text{solution}} = 1000 + 256.5$$

$$= \underline{\underline{1256.5 \text{ gm}}}$$

$$4 = 1.86 \times \frac{\left(\frac{0.75}{1256.5} \times 1000 \right)}{W} \times 1000$$

⑧

$$\Delta T_b = K_b \times i \times [1 + (5-1)\alpha]$$

$$\Delta T_b = K_b \times \frac{18.1/m}{81.9} \times 1000$$

$$m = 5 \times 10^{-4}$$

$$d = 1.05 \text{ gm/ml}$$

⑨

$$P = K_H \cdot x$$

$$20 \text{ kPa} = K_H \cdot x$$

18.1 % w/w

100 gm solⁿ — 18.1 gm

$$W_{\text{solvent}} = 81.9 \text{ gm}$$

m =

$$\frac{mv^2}{r} = \frac{KZe^2}{r^2}$$

$$mvr = \frac{nh}{2\pi}$$

$$r = 0.529 \frac{n^2}{Z} \text{Å}$$

$$v = 2.188 \times 10^6 \frac{Z}{n} \text{ m/sec}$$

$$T.E = -13.6 \frac{Z^2}{n^2} \text{ eV}$$

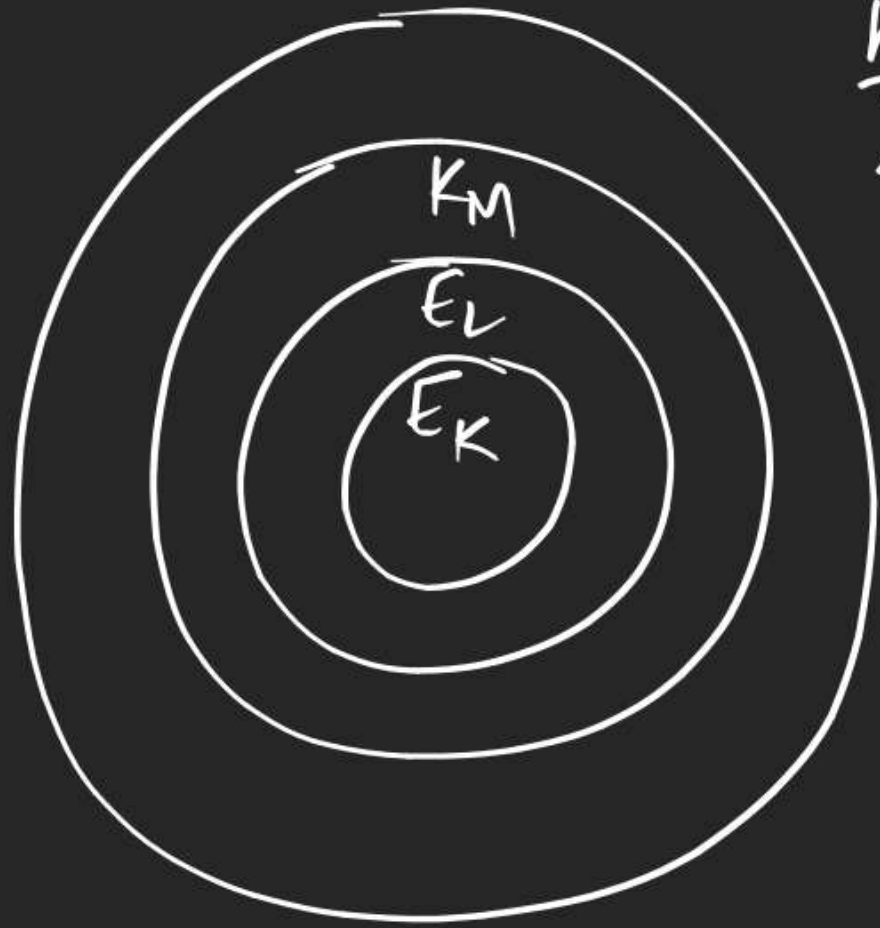
$$(T.E) = KE$$

$$PE = 2 \times T.E.$$

$$\text{Time period} = \frac{2\pi r}{v} \propto \frac{n^3}{Z^2}$$

$$\text{frequency} = \frac{1}{T}$$

$$r = \frac{n^2 h^2}{2\pi^2 K Z e^2 m}$$



$$E_K < E_L < E_M$$

$$\frac{hc}{\lambda} = h\nu = 13.6 Z^2 \left[\frac{1}{n_1^2} - \frac{1}{n_2^2} \right]$$

$$\frac{1}{\lambda} = R_H Z^2 \left[\frac{1}{n_1^2} - \frac{1}{n_2^2} \right]$$

$$\frac{1}{R_H} = 912 \text{ \AA}^0$$

$$R_H = 109737 \text{ cm}^{-1}$$