

0-1 42-47

5-1 23-35

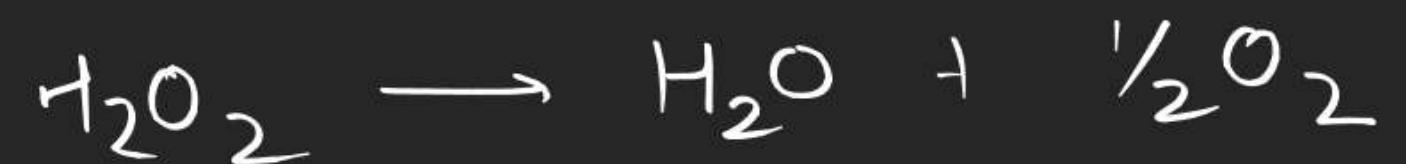
0-1 1-4

$$\textcircled{43} \quad \text{Rate} = k [A]^1$$

$$6.930 \times 10^{-6} = k (0.01)$$

$$6.93 \times 10^{-4} = k \quad t = 50 \times 60 = 3000$$

$$-\frac{d[A]}{dt} = k [A]_0 e^{-kt}$$

$$\textcircled{47}$$
 a $a-x$ 0

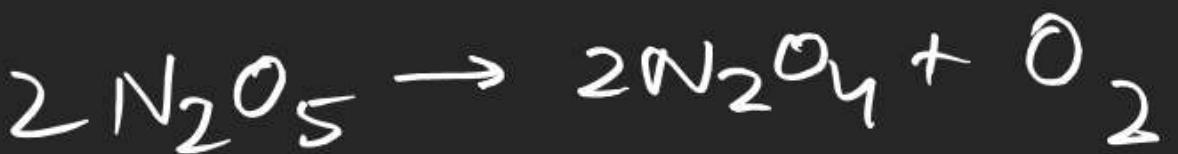
$$k = \frac{1}{20} \ln \frac{100}{90}$$

 $\frac{x}{2} \propto 5$ $\frac{y}{2} \propto 50$ $x \propto 10$ $a \propto 100$

$$\textcircled{29} \quad k_1 = \frac{1}{53} \ln \frac{100}{50}$$

$$\frac{600}{}$$

$$k_2 = \frac{1}{100} \ln \frac{100}{27}$$

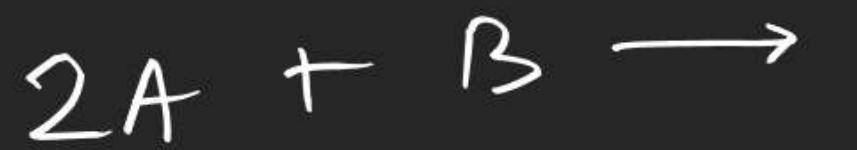


time	30°	∞
Pressure	284.5	584.5

$2A \rightarrow 4B + C$	$(P_A)_0$	$(P_A)_0 - x$	$2x$	$x/2$	$(P_A)_0/2$
	$(P_A)_0$	$(P_A)_0 - x$			

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

$$(k_2) = \frac{k_A}{2}$$



(55)

$$k = \frac{1}{t} \ln \frac{42.03 - 19.24}{42.03 - 24.2}$$

20

O-U

$$k_t = 2 \left(\sqrt{A_0} - \sqrt{A_t} \right)$$

$$k_{th} = 2 \sqrt{A_0} \left(1 - \frac{1}{\sqrt{2}} \right)$$

$$k_{th} = 2 \sqrt{A_0} \left(1 - \frac{1}{2} \right)$$

(3)



$$\frac{d[C]}{dt} = \frac{dx}{dt} = k(2-2x)(1-x)^1$$

$$\frac{dx}{dt} = 2k$$

$$[C] = x = 2kt$$

③ By optical rotation :-

$$\alpha \propto Cl$$

$$\alpha = \frac{\alpha^{\circ}}{d} \text{ C } l$$

↑
specific
rotation

Inversion of cane sugar



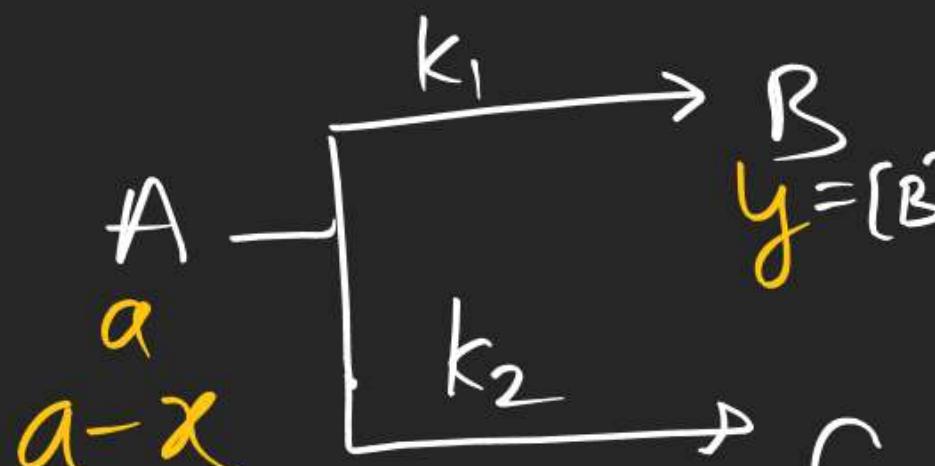
$$k = \frac{1}{t} \ln \frac{[Sucrose]_0}{[Sucrose]_t} = \frac{1}{t} \ln \frac{a}{a-x}$$

time	0	t	∞
Rotation	λ_0	λ_t	λ_∞
$S \rightarrow G + F$			
a	0	0	
$a-x$	x	x	
0	a	a	

$$\frac{a}{a-x} = \frac{\lambda_\infty - \lambda_0}{\lambda_\infty - \lambda_t}$$

$$\begin{aligned} \lambda_0 &= \lambda_s^0 a \quad \text{--- ①} \\ \lambda_t &= \lambda_s^0 (a-x) + \lambda_g^0 x + \lambda_f^0 x \quad \text{--- ②} \\ \lambda_\infty &= \lambda_g^0 a + \lambda_f^0 a \quad \text{--- ③} \\ \text{by eq ③} - \text{eq ①} \\ \lambda_\infty - \lambda_0 &= a (-\lambda_s^0 + \lambda_g^0 + \lambda_f^0) \quad \text{--- ④} \\ \text{by eq ②} \\ \lambda_t - \lambda_0 &= x (-\lambda_s^0 + \lambda_g^0 + \lambda_f^0) \quad \text{--- ⑤} \\ \lambda_\infty - \lambda_t &= (a-x) (-\lambda_s^0 + \lambda_g^0 + \lambda_f^0) \quad \text{--- ⑥} \end{aligned}$$

$$k = \frac{1}{t} \ln \frac{\lambda_0 - \lambda_0}{\lambda_\infty - \lambda_t}$$

1st order parallel

$$y = [B]$$

$$x = y + z$$

$$\frac{dx}{dt} = \frac{dy}{dt} + \frac{dz}{dt}$$

$$-\frac{d[A]}{dt} = \frac{d[B]}{dt} + \frac{d[C]}{dt}$$

$$-\frac{d[A]}{dt} = (k_1 + k_2)[A]$$

$$[A]_t = [A]_0 e^{-(k_1+k_2)t}$$

$$k_{\text{Total}} = k_1 + k_2$$

$$t_{1/2} = \frac{\ln 2}{k_1 + k_2}$$

$$-\frac{d[A]}{dt} = -\frac{d(a-x)}{dt} = \frac{dx}{dt}$$

$$\frac{d[B]}{dt} = k_1[A] \quad \frac{d[C]}{dt} = k_2[A]$$

$$\frac{d[B]}{dt} = \int_0^t k_1 [A] dt$$

$$[B] = \int_0^t k_1 [A]_0 e^{-(k_1+k_2)t} dt$$

$$[B] = \frac{k_1}{k_1+k_2} [A]_0 \left\{ 1 - e^{-(k_1+k_2)t} \right\}$$

$$[C] = \frac{k_2}{k_1+k_2} [A]_0 \left\{ 1 - e^{-(k_1+k_2)t} \right\}$$

$$\frac{[B]}{[C]} = \frac{k_1}{k_2}$$

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

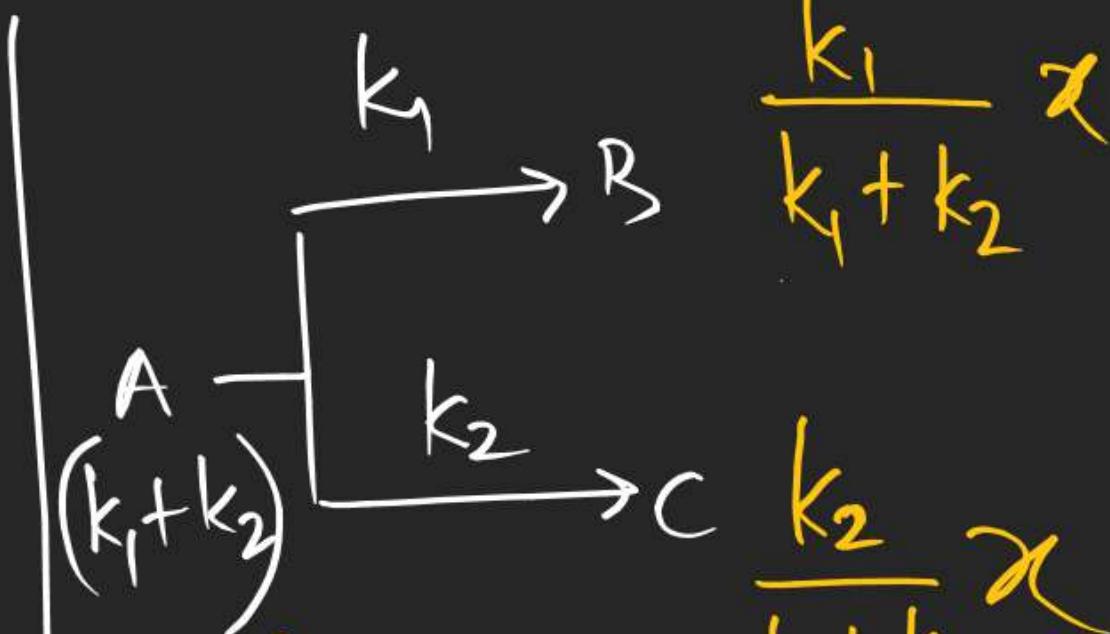
$$2/5 \times 100$$

$$3/5 \times 100$$

$$\begin{aligned} x &= [A]_0 - [A]_t \\ &= [A]_0 \left\{ 1 - e^{-(k_1+k_2)t} \right\} \end{aligned}$$

$$= \frac{k_1}{k_1+k_2} x$$

$$= \frac{k_2}{k_1+k_2} x$$



1 mol

x

$$\frac{k_1}{k_1+k_2} x$$

$$\frac{k_2}{k_1+k_2} x$$

0-1

48 - 51

5-1

36 - 38

