



optically pure sol'n  $\rightarrow$ 

+

Racemic mix 50%

-

optically pure

% d	% l	OP = EE	Impure part	( $\alpha_{obs}$ ) <sub>mix</sub>
100%	0%	100	0	+ $\theta_d$
90%	10%	80	20	+0.8 $\theta_d$
80%	20%	60	40	+0.6 $\theta_d$
70%	30%	40	60	+0.4 $\theta_d$
60%	40%	20	80	+0.2 $\theta_d$
50%	50%	0	100	0
40%	60%	20	80	-0.2 $\theta_d$
30%	70%	40	60	-0.4 $\theta_d$
20%	80%	60	40	-0.6 $\theta_d$
10%	90%	80	20	-0.8 $\theta_d$
0%	100%	100	0	- $\theta_d$
86%	14%	72% (d > l)	28%	+0.72 $\theta_d$
18%	82%	64%	36% (l > d)	-0.64 $\theta_d$



39%	61%	22% (27d)	78%	-0.220d
70% 7 gm	30% 3 gm	40%	60%	+0.40d
70.88% 5 gm	29.12% 2 gm	42.88%	57.12%	+0.4288d

$EF = \frac{7-3}{7+3} \times 100$   
 $EF = \frac{5-2}{5+2} \times 100 = \frac{300}{7}$

**STEREISOMERISM**

$$ee = \frac{d-l}{d+l} \times 100$$

$$d+l=100$$

$$d-l=ee$$

$$\% d = \frac{100+ee}{2}$$

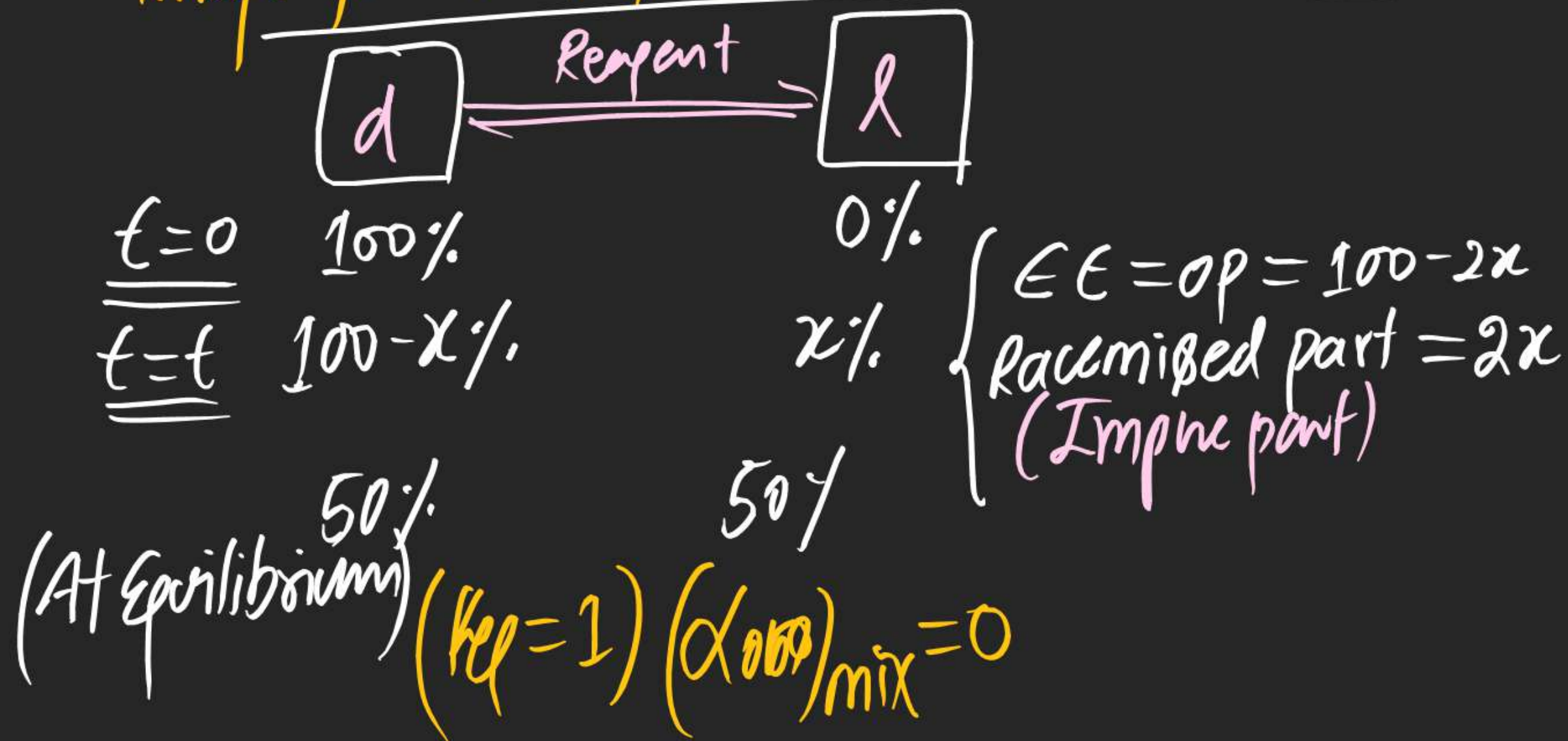
$$\% l = \frac{100-ee}{2}$$

Racemisation  
Resolution  
Calculation



# STEREISOMERISM

Racemisation: A phenomenon in which half of any optically pure compound converted into its own mirror image form is known as Racemisation.

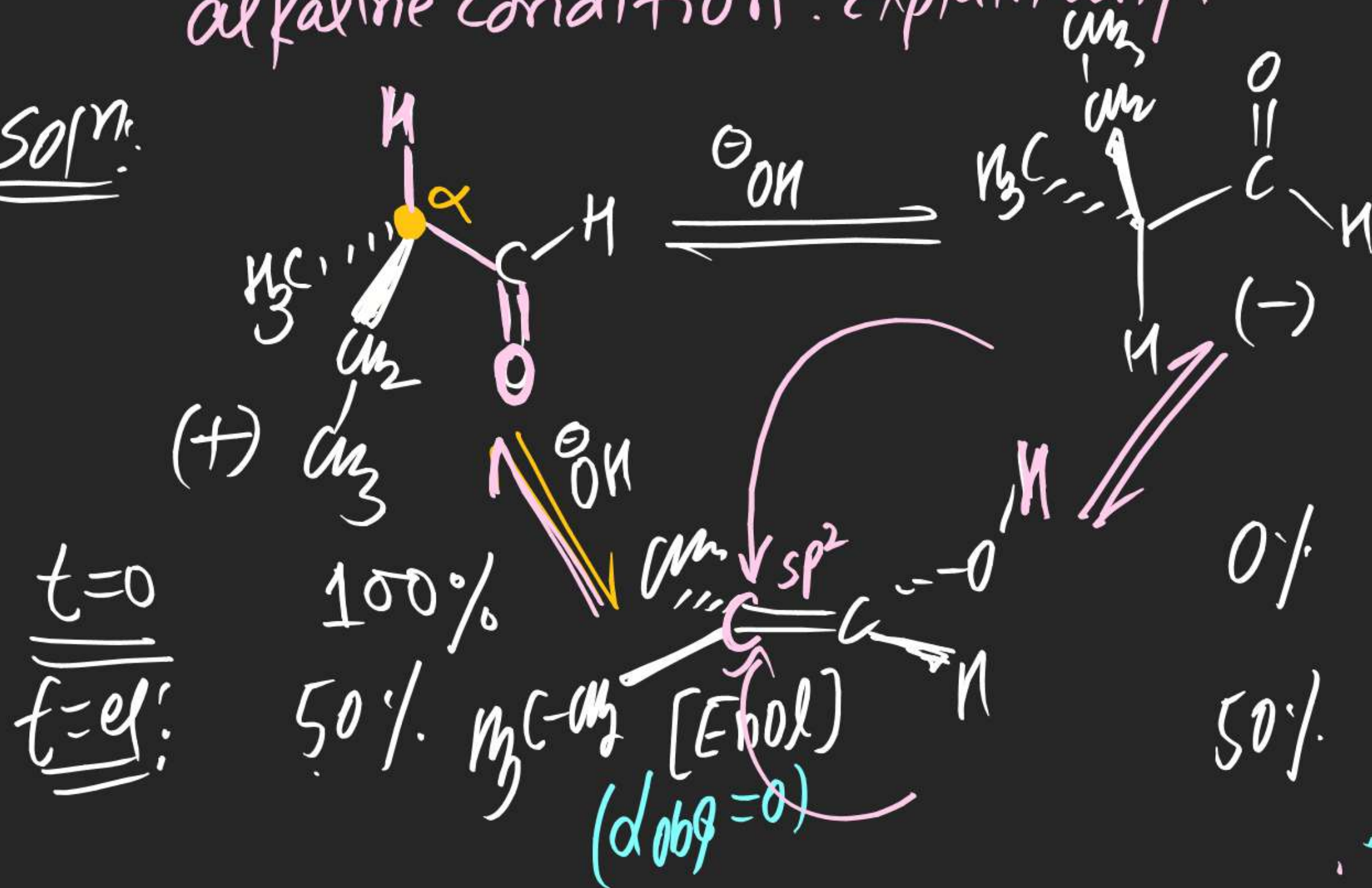




## STEREISOMERISM

Ex-1: (+)-2-methyl Butanal slowly racemises in alkaline condition. Explain why?

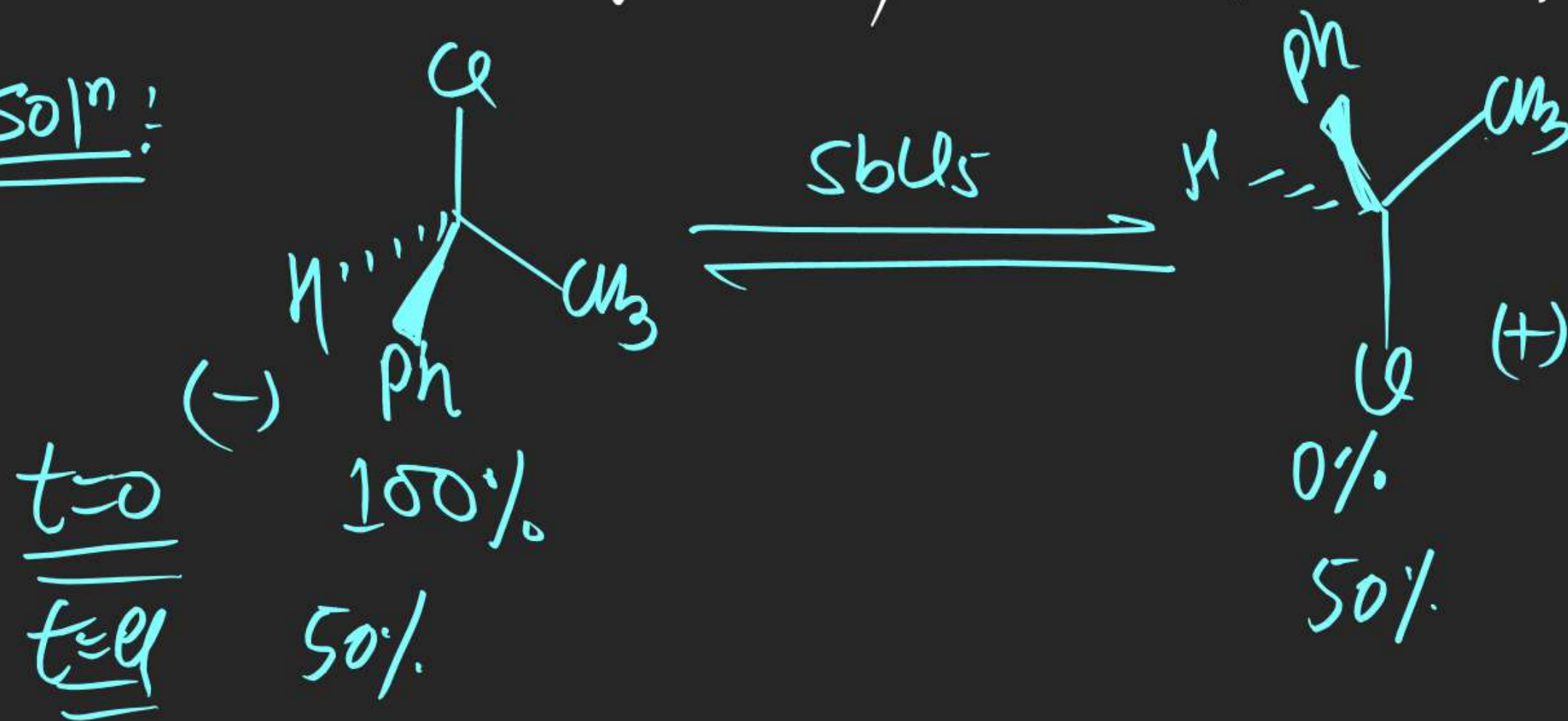
Soln.



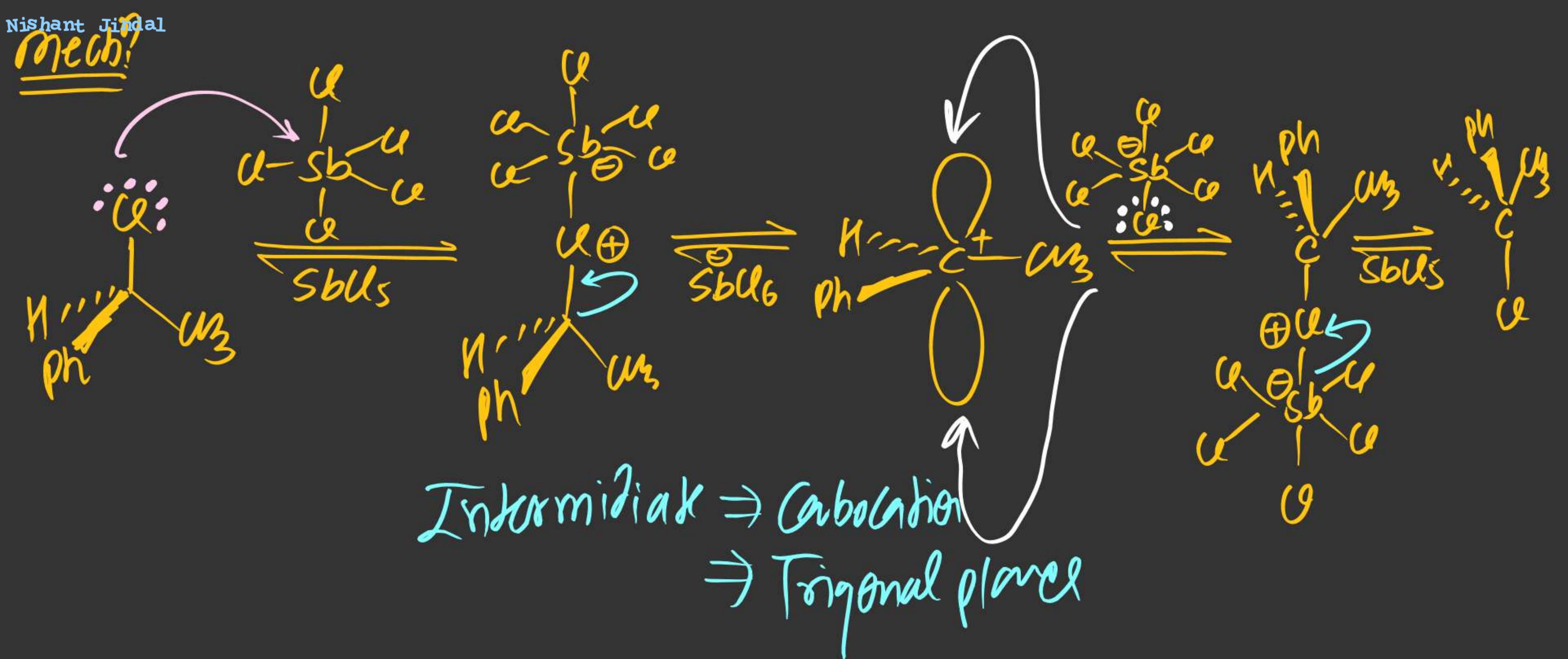
# STEREISOMERISM

Ex-2: (-)-1-chloro-1-Phenyl Ethane gets slowly Racemised on addition of  $AlCl_3/SbCl_5$ . Explain why?

Sol<sup>n</sup>:

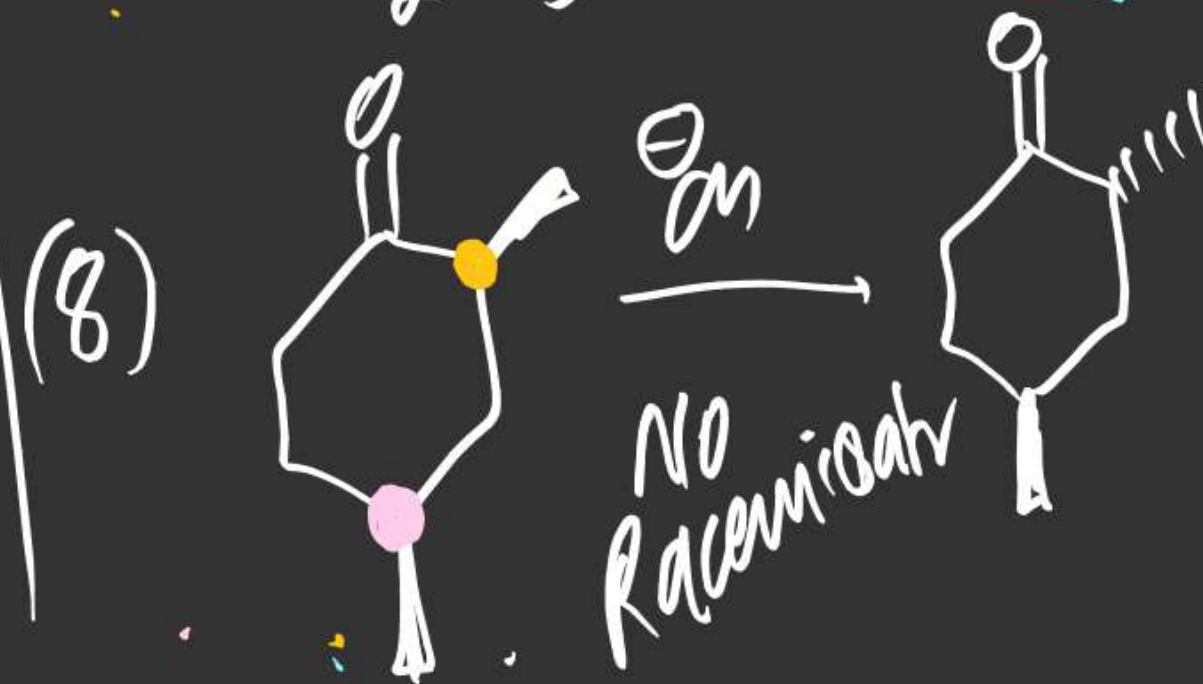
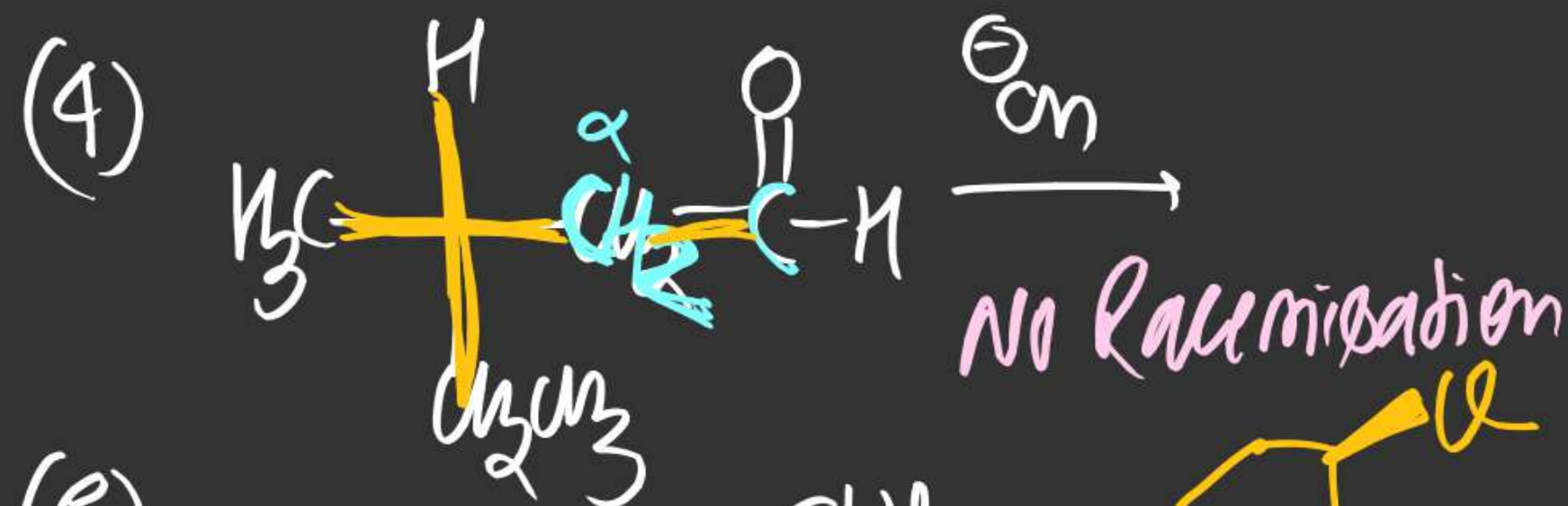
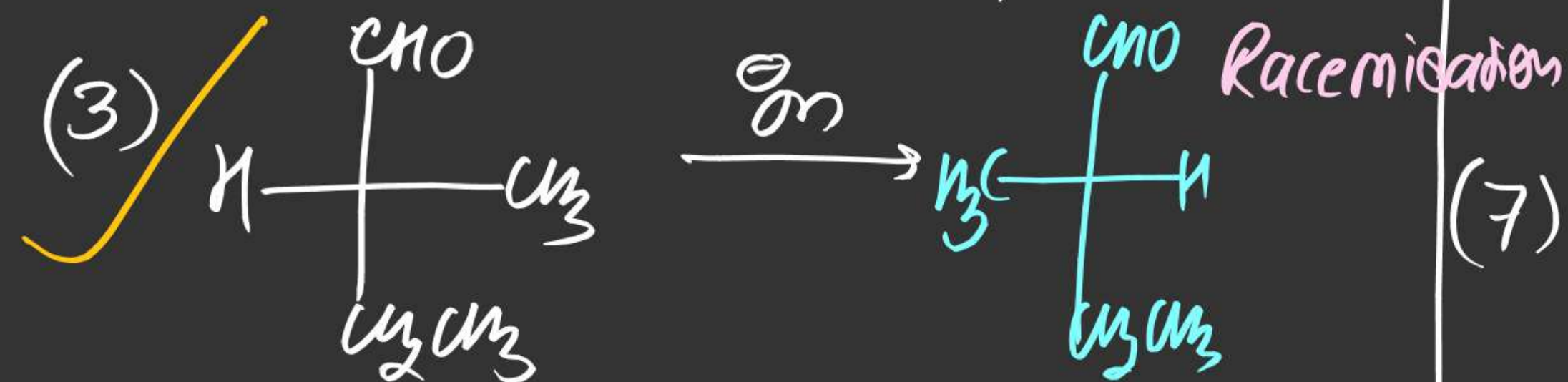








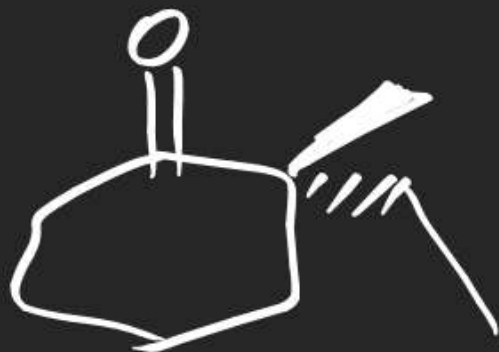
⇒ Find Reactions in which Racemisation takes place



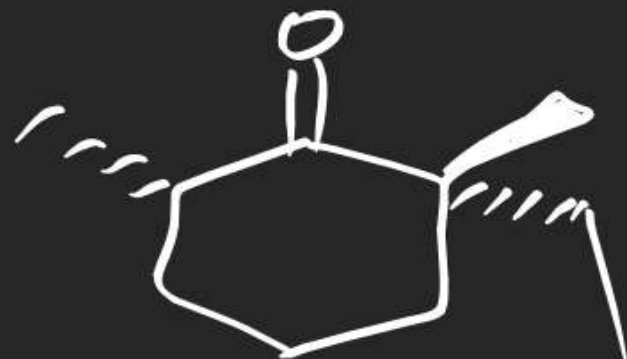


# STEREISOMERISM

(9)



(10)

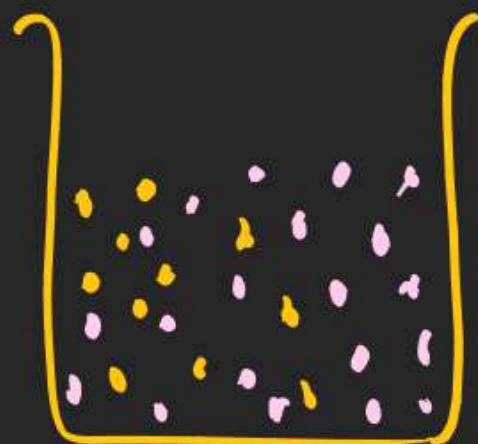




# STEREISOMERISM

## (#) Separation of Enantiomeric mixture:-

(1) Mechanical method:-  $\Rightarrow$  It is a hand pick method possible when sample is in crystalline form & geometry is asymmetric.



(2) Biological method:- In this case mixture is added with a enzyme which is having affinity for a particular enantiomer.



### (3) Chemical method (Resolution)

⇒ In this method Enantiomeric mixture is converted into Diastereomeric mixture By adding chemically & optically Active External Reagent.

