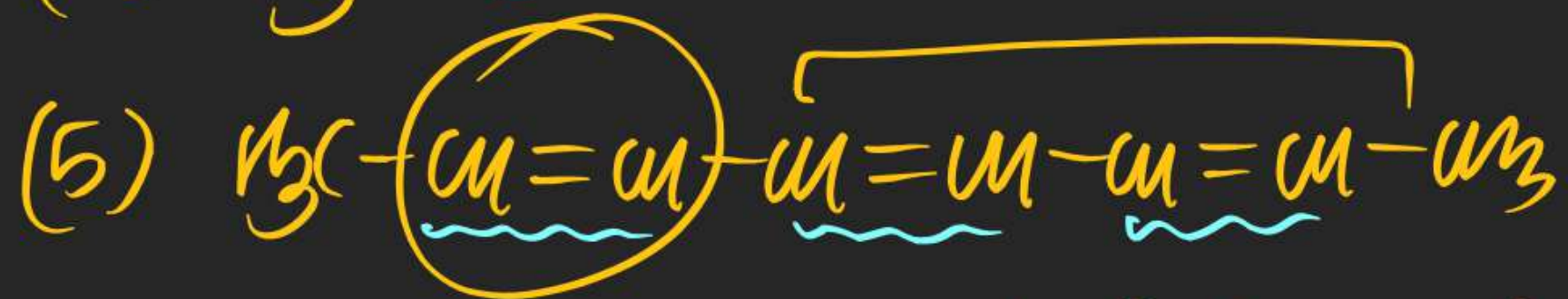
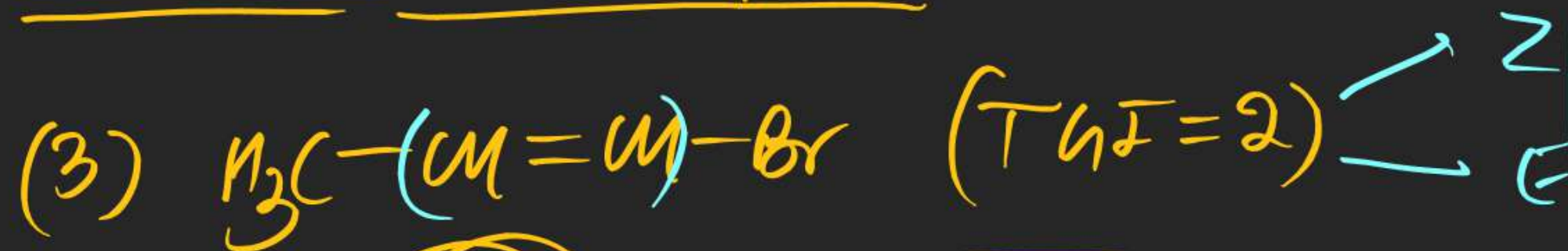


STEREISOMERISM

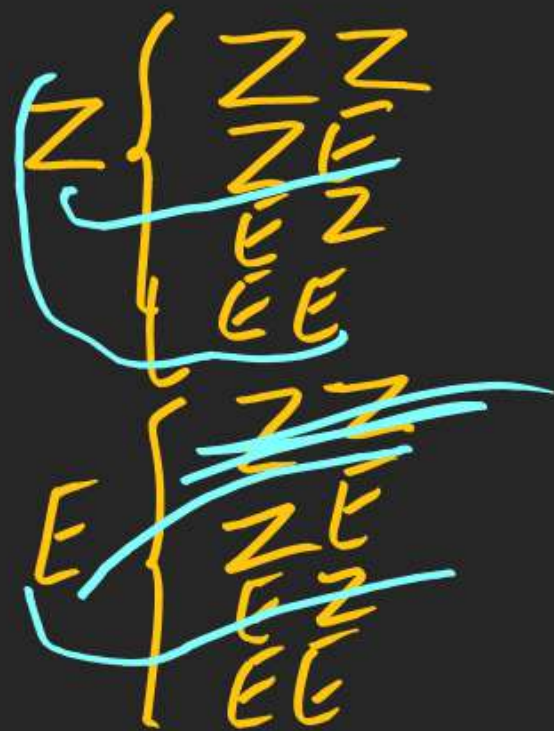
NW (Discussion) Theory Copy:



$n = 3$ (odd) & Symmetrical

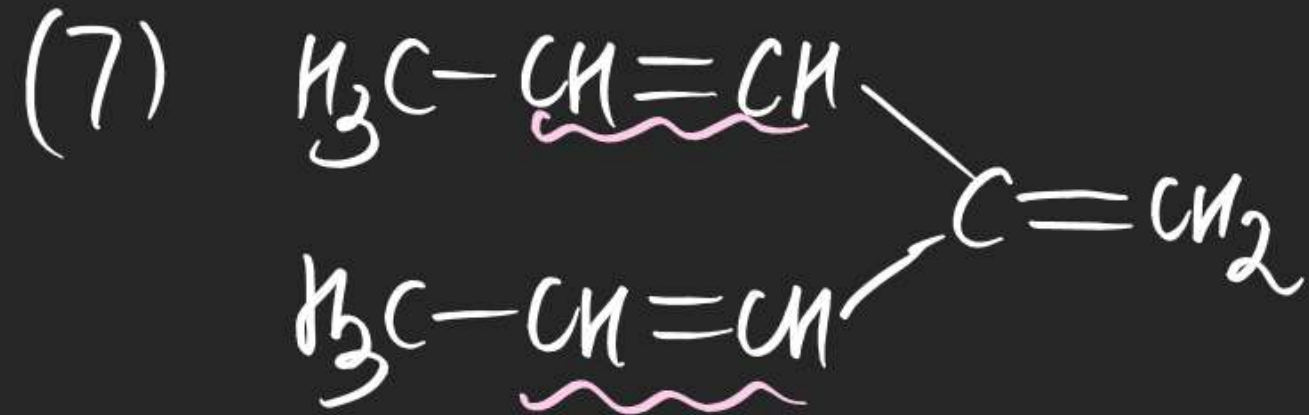
$$\text{TGI} = 2^{n-1} + 2^{\frac{n-1}{2}}$$

$$= 2^2 + 2^1 = 6$$

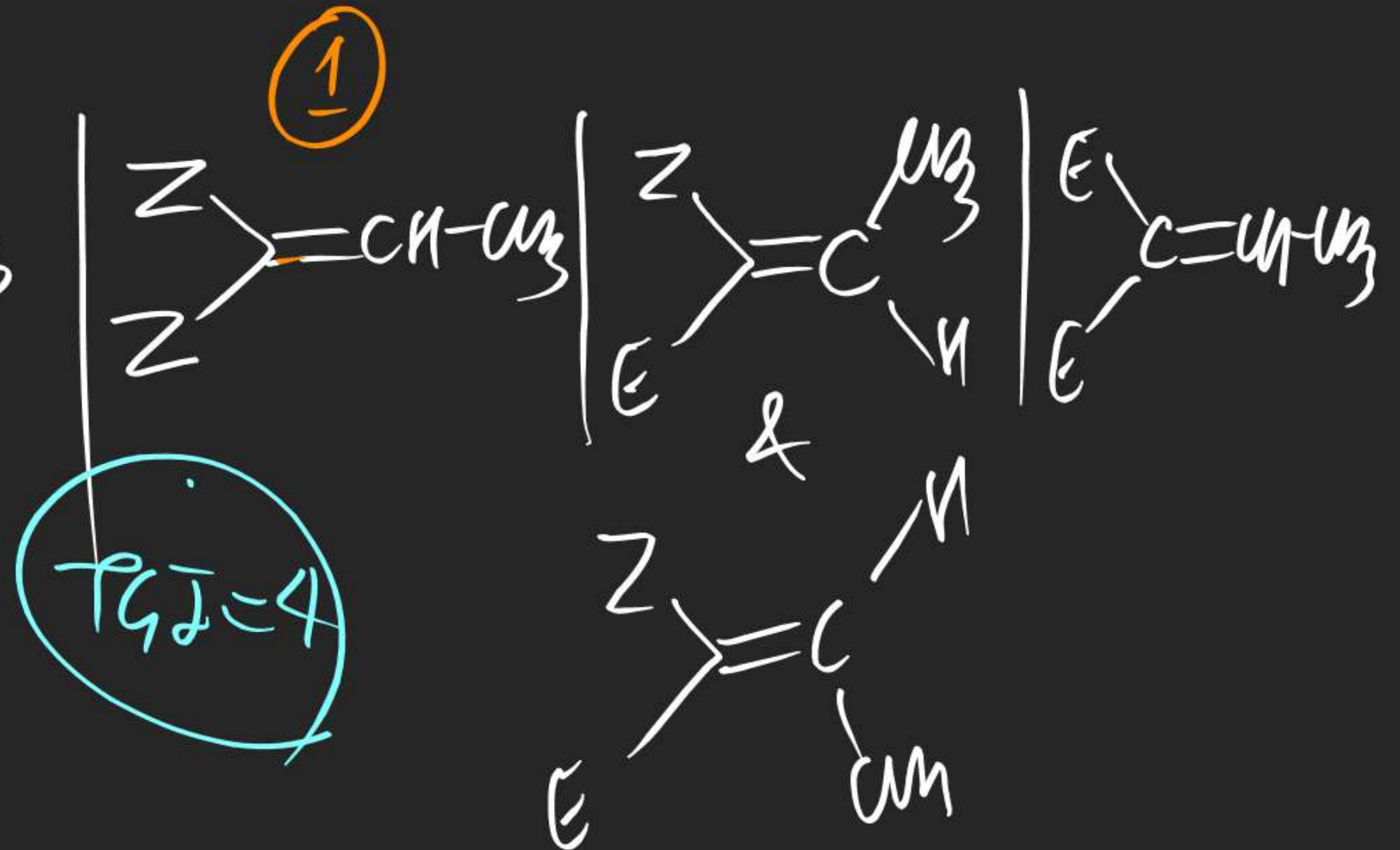
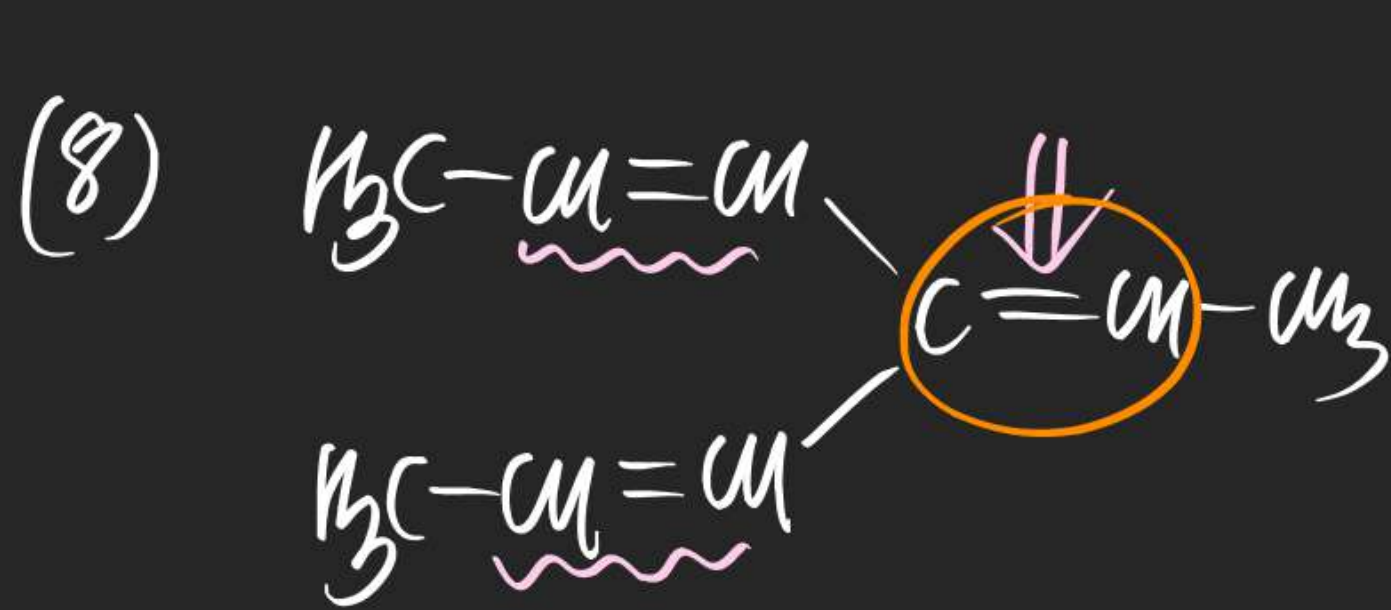


$$\text{TGI} = 2^3 = 8$$

STEREISOMERISM

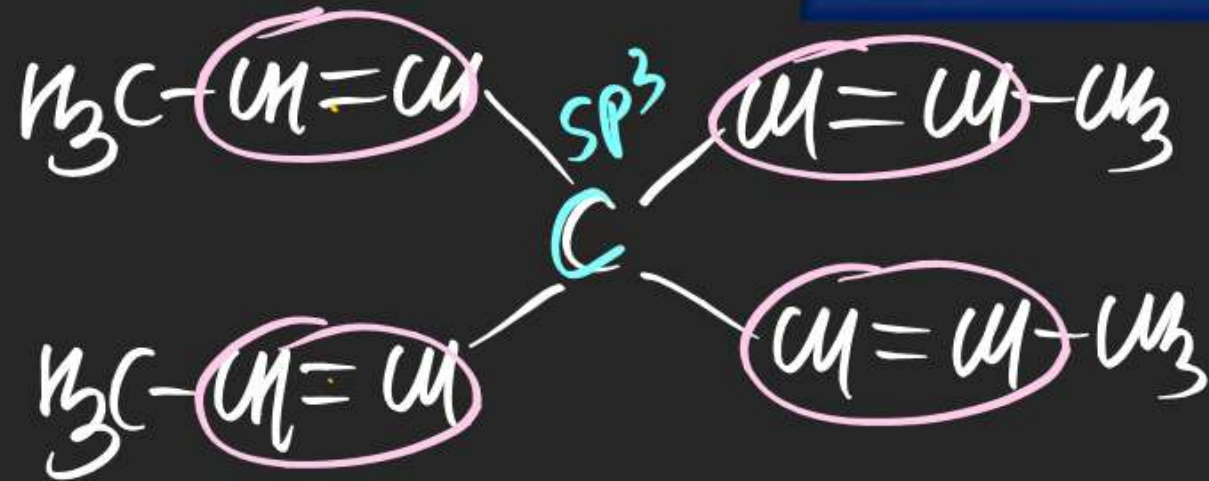


(TGI = 3)

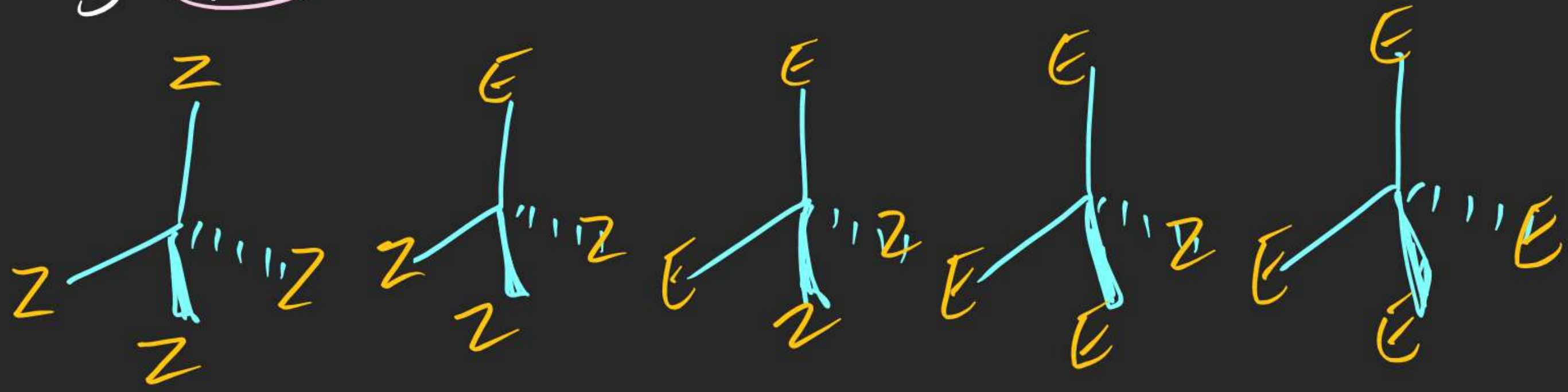


STEREISOMERISM

(10)

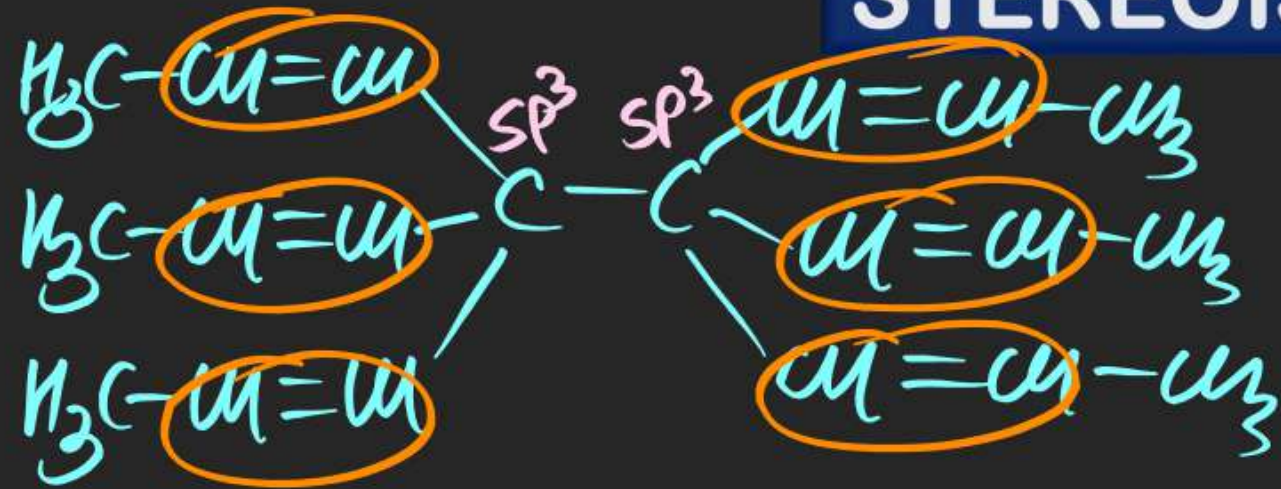


$\text{TGI} = 5$

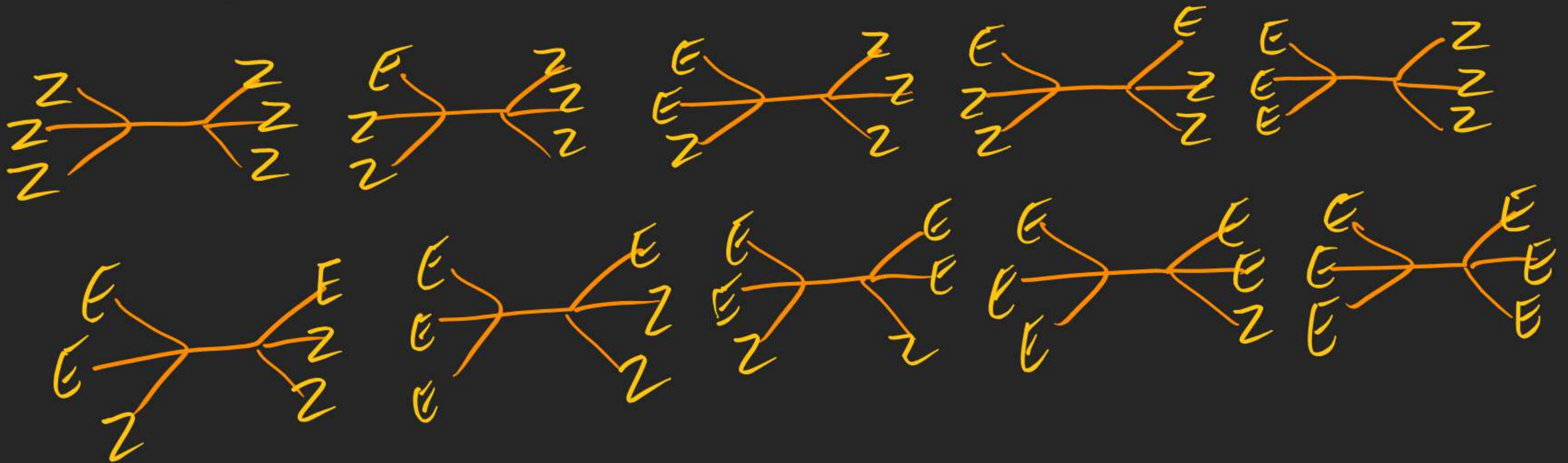


STEREISOMERISM

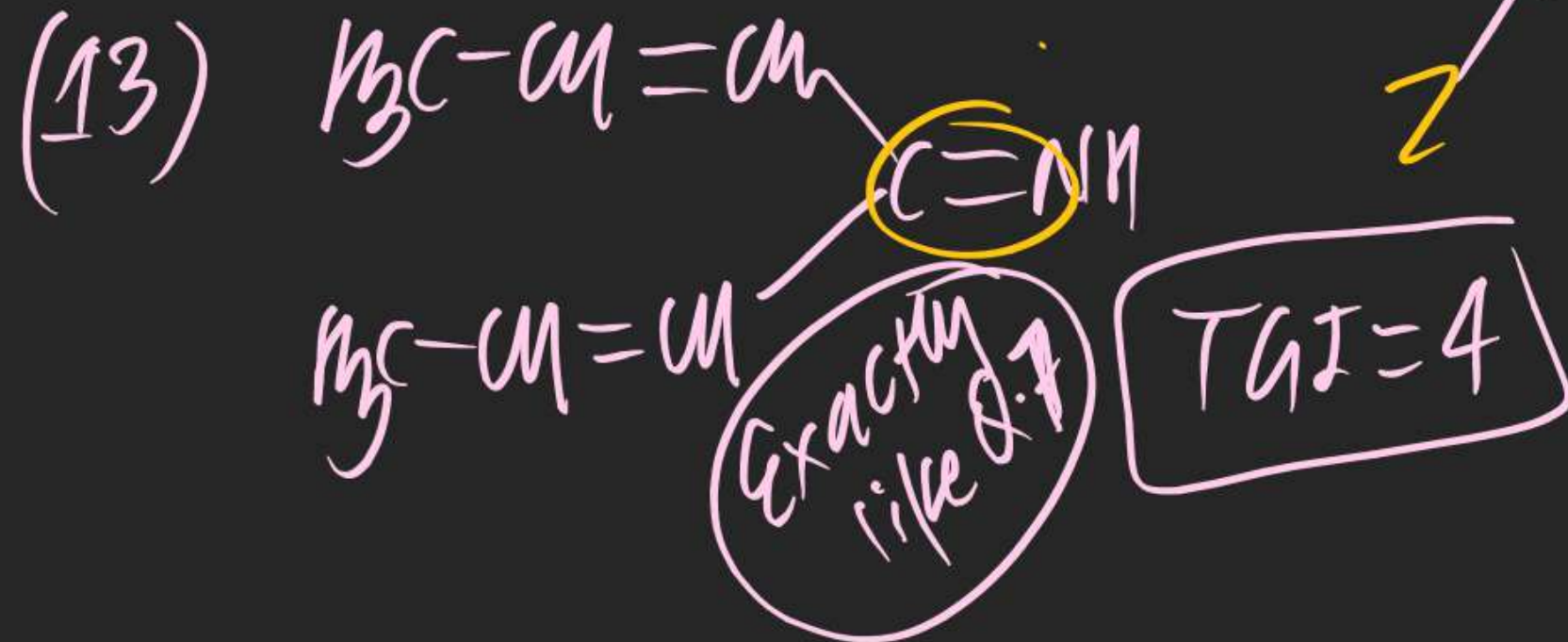
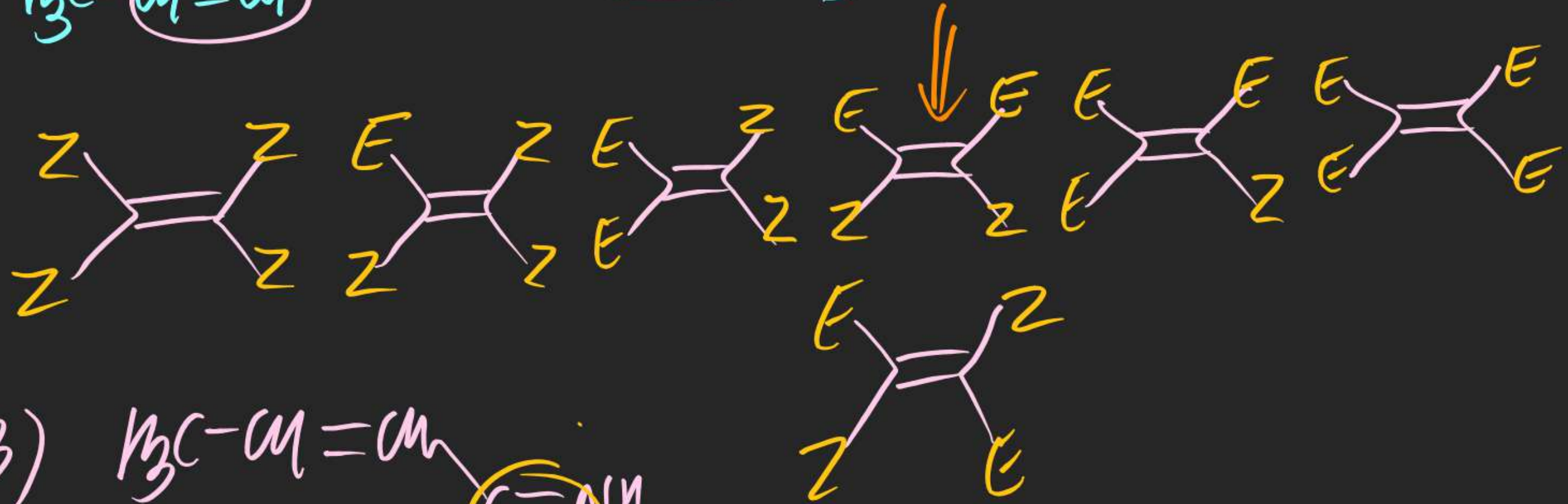
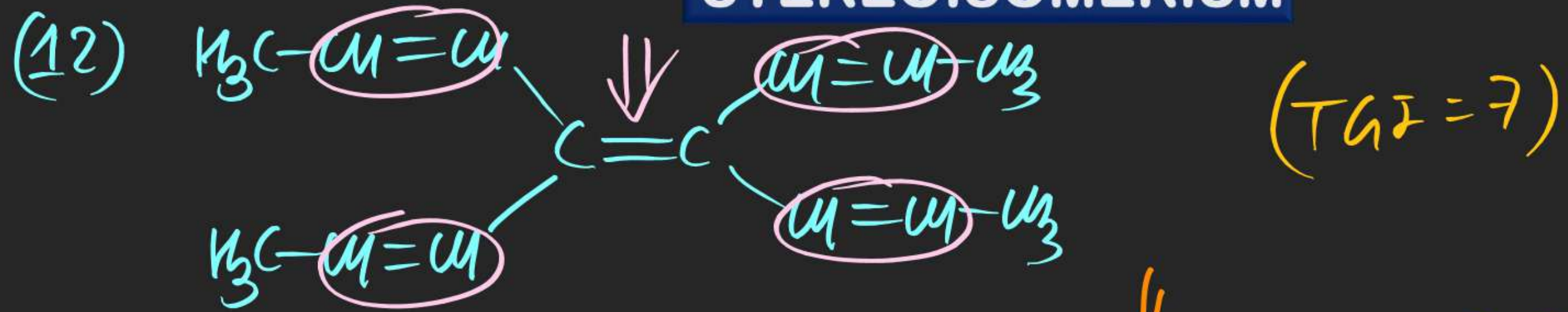
(11)



(TGI = 10)



STEREISOMERISM

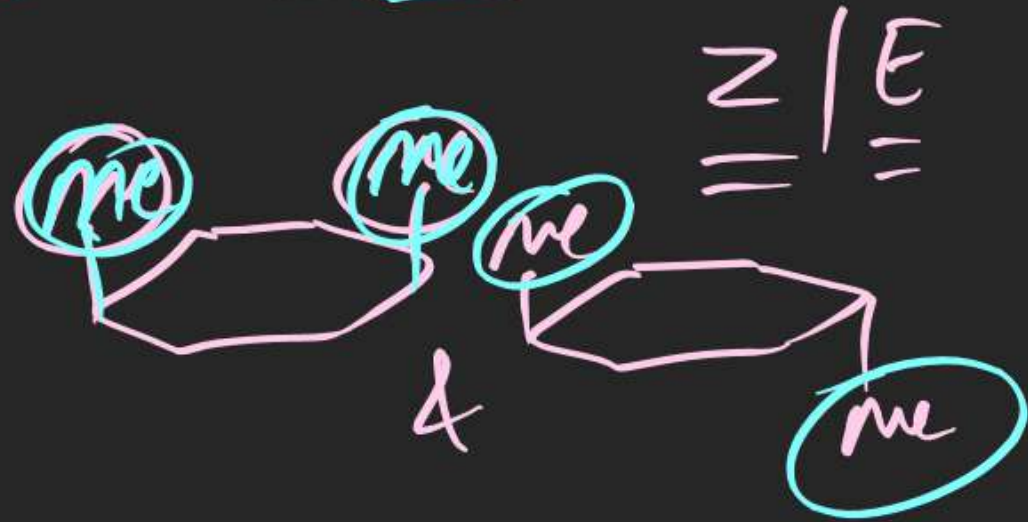


STEREISOMERISM

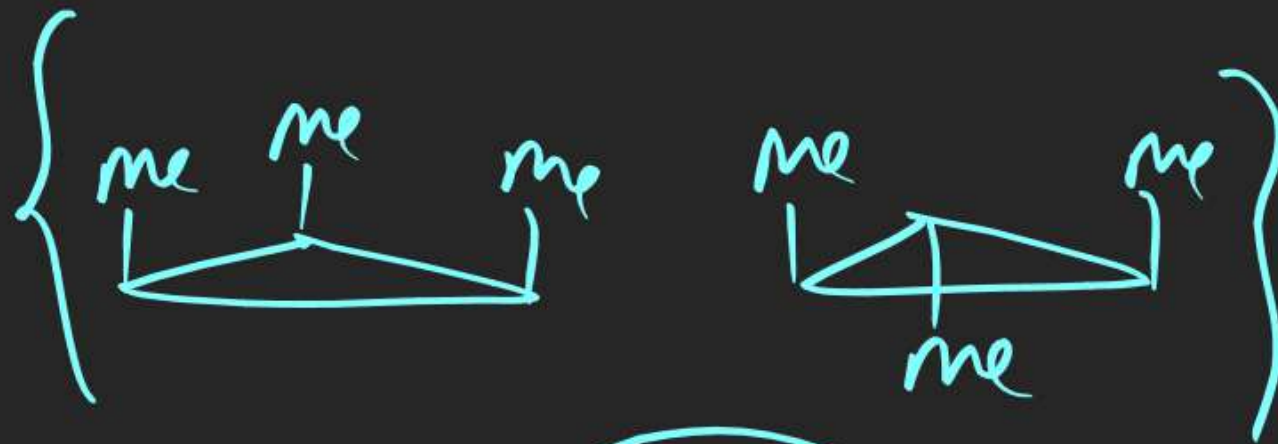


$$TGI = 2$$

$$\left[\frac{n}{2} \right]$$



$$Z/E$$



$$TGI = 2$$

(16)

$TGI = 2$

STEREISOIMERISM

9^{pm} — 10^{pm} — M
 10 — 11 — P
 11 — 12 — C

M

$9:00$ — $9:30 \text{ pm}$

$9:30 \text{ pm}$ — $12:00$ mid night

$12:00$ — $6:30 \text{ AM}$ (Sleeping cycle)

$6:30$ — $7:30 \text{ AM}$ (Ready)

P

$7:30$ — $10:30 \text{ AM}$

C

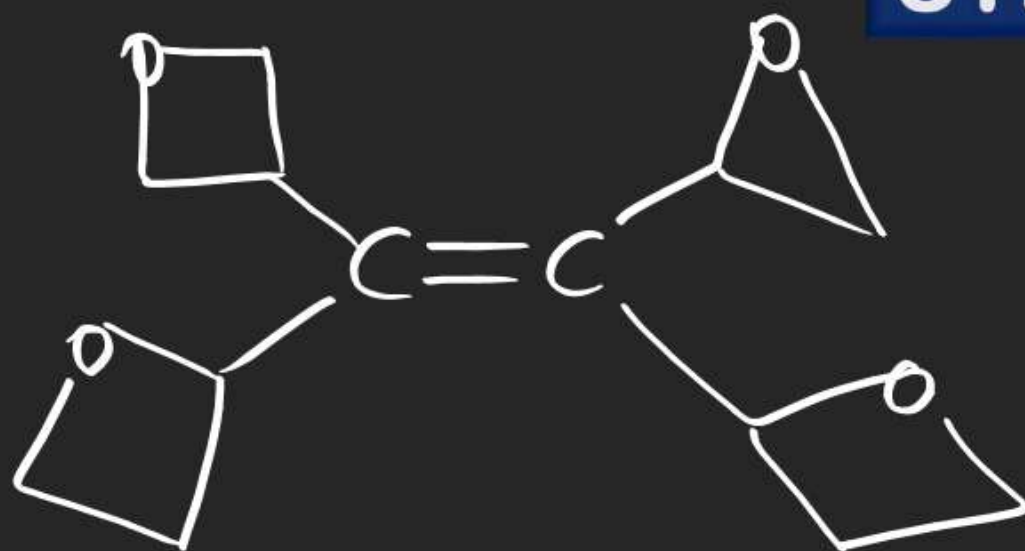
$10:45$ — $1:30 \text{ pm}$

$1:30$ — $2:15$ Lunch

$2:15$ — $4:00 \text{ pm}$

STEREISOIMERISM

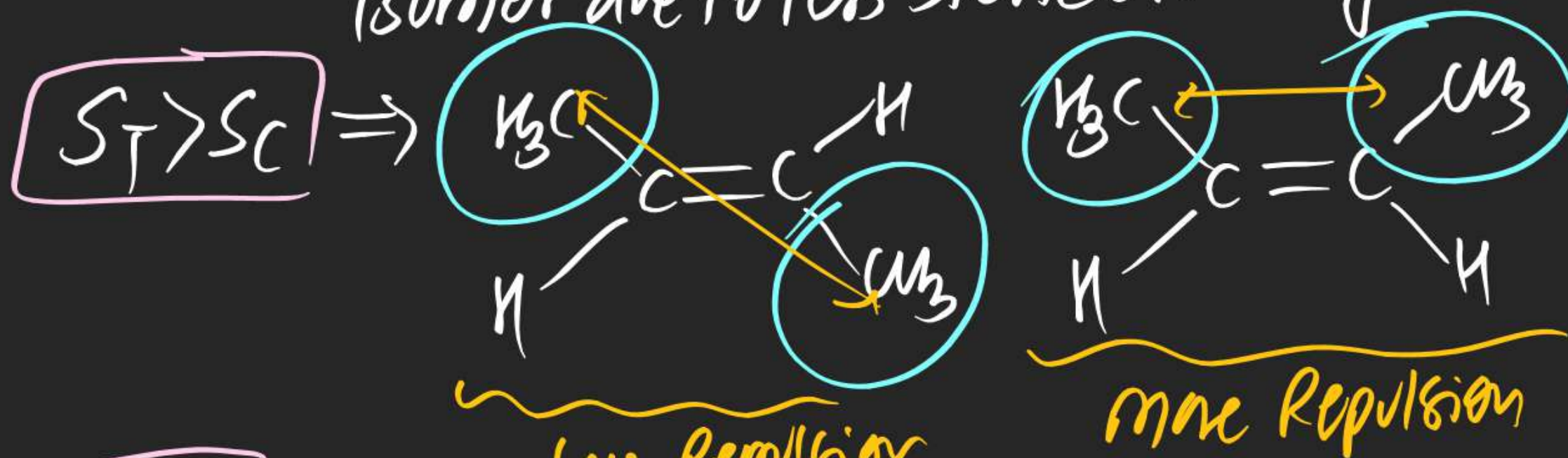
(22)



STEREISOMERISM

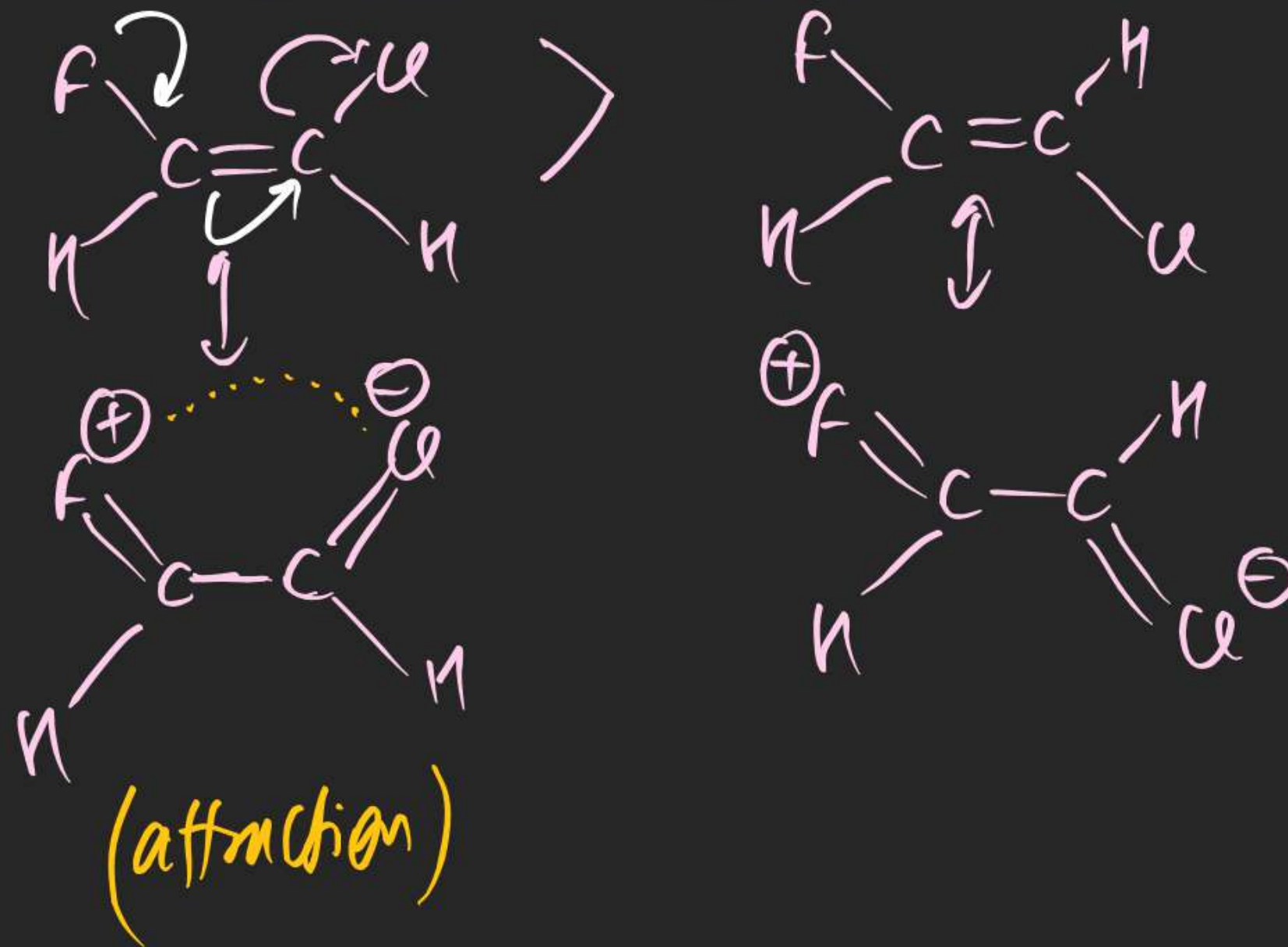
(#) Properties of Geometrical Isomers:

(1) stability: usually Trans isomer is more stable than cis isomer due to less steric crowding



$S_C > S_T \Rightarrow$ in case of attraction

STEREISOMERISM

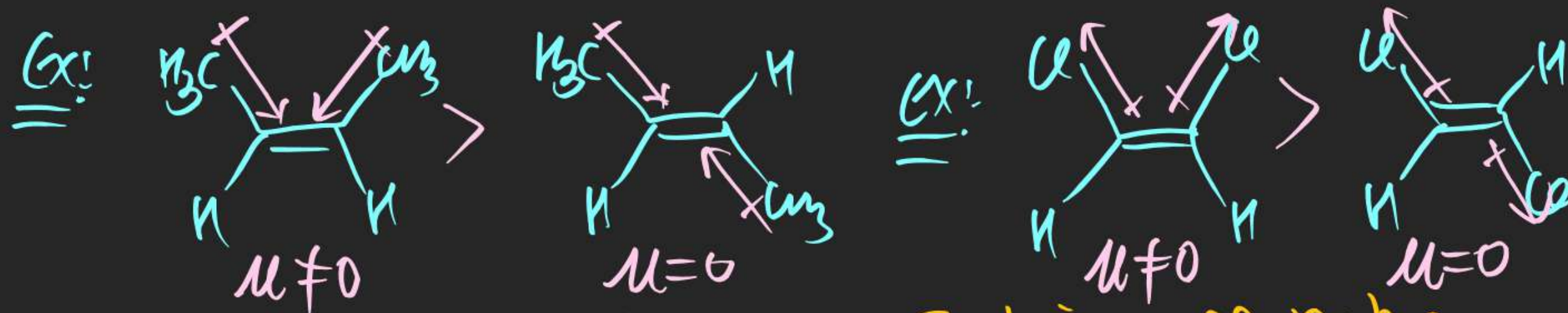


STEREISOMERISM

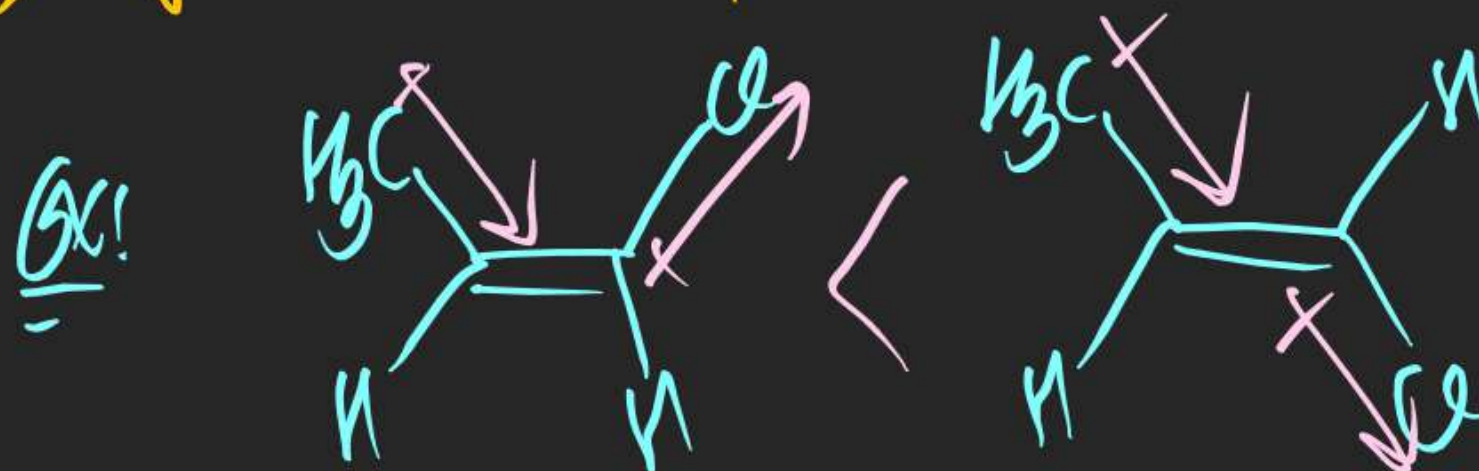
4am - 11am
9am - 11am

(2) Dipole moment:

$\mu_c > \mu_T \Rightarrow$ If attached groups contain same nature



$\mu_T > \mu_c \Rightarrow$ If attached groups contain opp. nature.



STEREISOMERISM

(3) Boiling Point:

Boiling point $\propto \mu$

Ex!



$$BP_c > BP_t$$

(4) melting point:

melting point \propto packing fraction

$MP_t > MP_c \Rightarrow$ since Trans isomer having higher packing fraction than cis isomer.

STEREISOIMERISM

OPTICAL ISOMERISM

Symmetry in Organic Compounds:

There are Two type of Symmetry

(1) Alternating Axis of Symmetry (A.A.O.S) / S_n

or

Improper Axis of Symmetry

or
 n -Fold Alternating Axis of Symmetry

(2) Axis of Symmetry (A.O.S) / C_n

or
 n -Fold Axis of Symmetry

$n=1$

S_1

Plane of Symmetry

(P.O.S) / σ_n

$n=2$

S_2

Centre of Symmetry

(C.O.S)

or

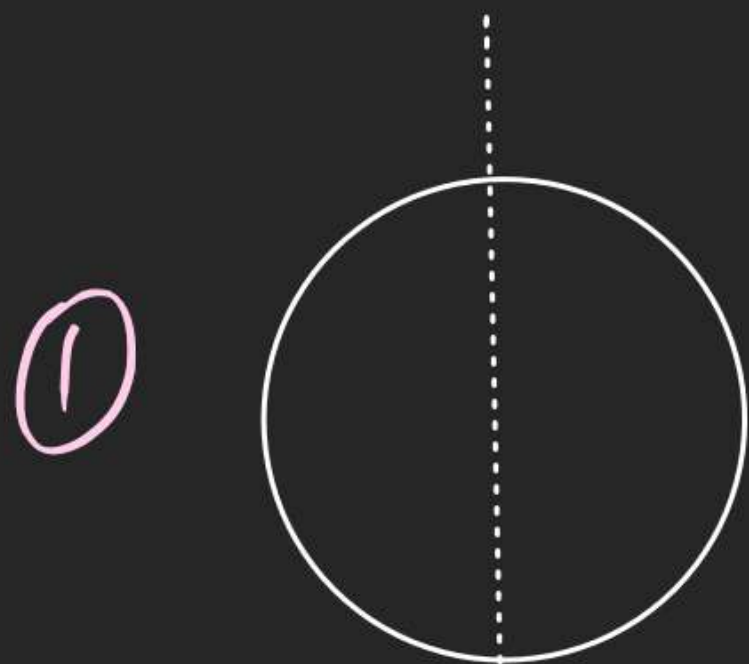
Centre of Inversion

(C.I.)

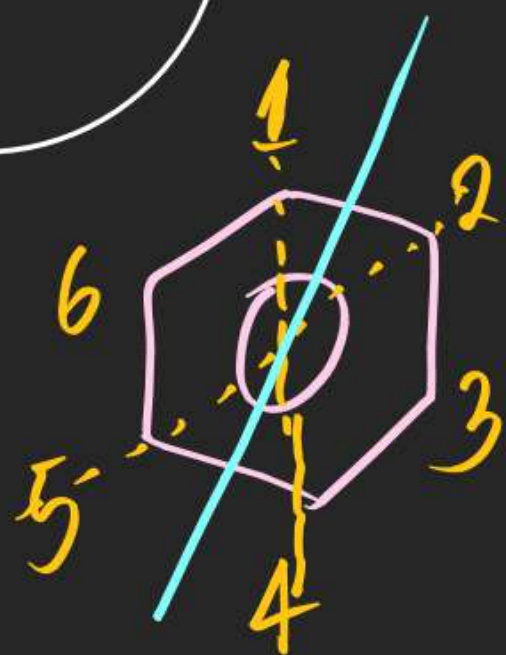
STEREISOMERISM

(1) Plane of Symmetry:

It is defined as a Imaginary plane across which when a object a molecule is divided into two halves then these halves must be Exact mirror images of each other.



(2)



$$POS = \infty$$

molecular plane
POS

1, 4

2, 5

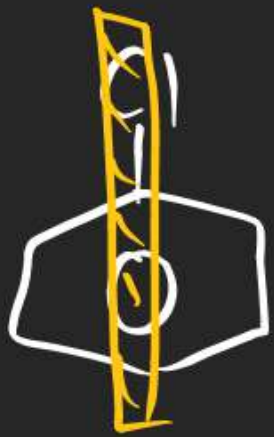
3, 6

12-45
23-56
16-34

(POS=7)

STEREISOMERISM

(3)



(pos=2)

(7)



(11)

(8)

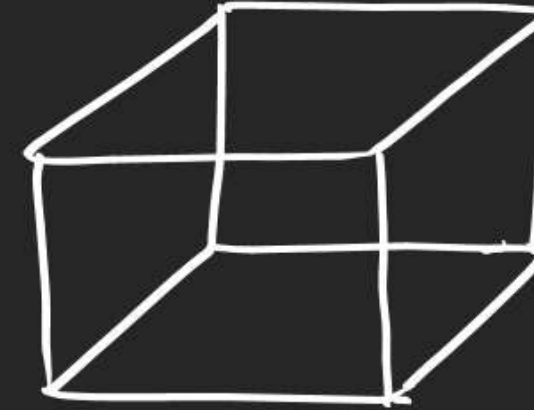
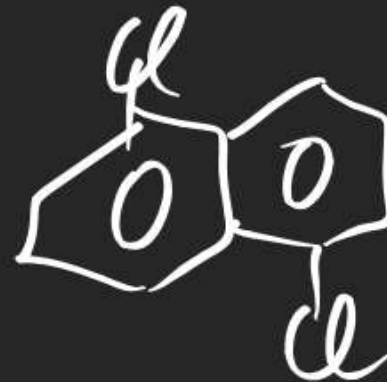


(12)

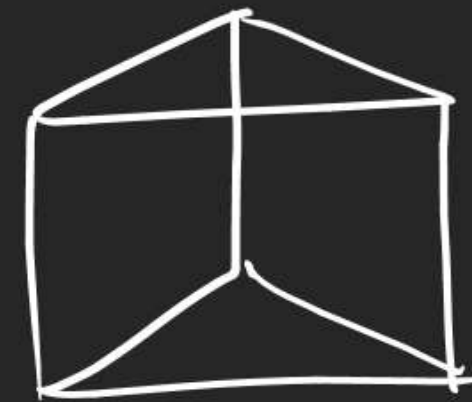
(9)



(10)



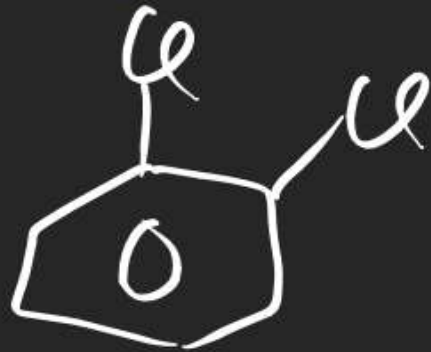
Cube



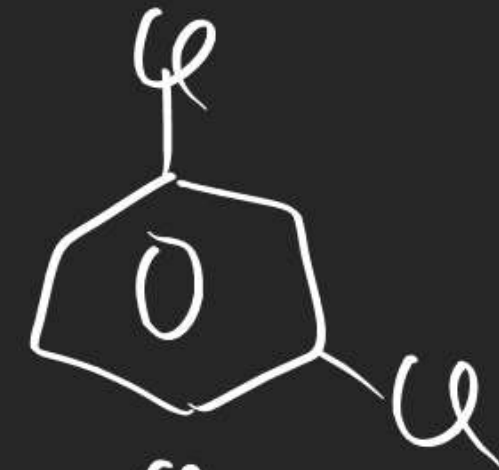
prism



(4)



(5)



(6)



STEREISOMERISM

