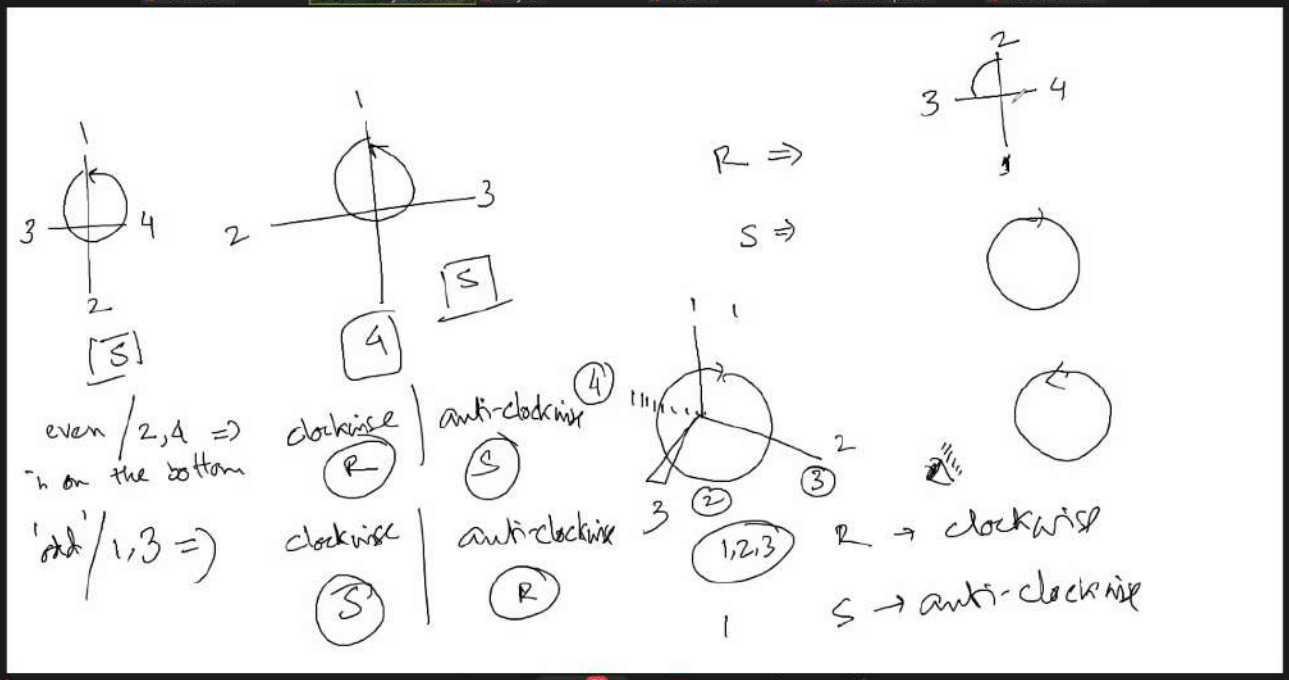
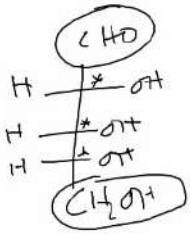


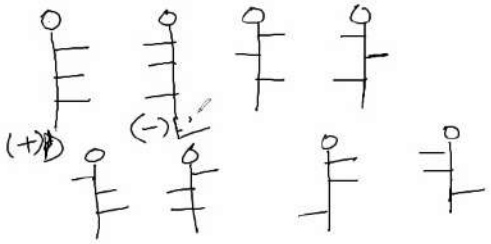
(*)



Total no. of possible stereoisomers?

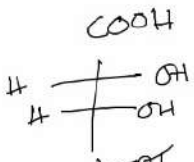
$2^3 = 8$

2^n



Ribose
(Aldopentose)

(**)



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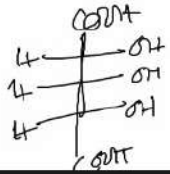
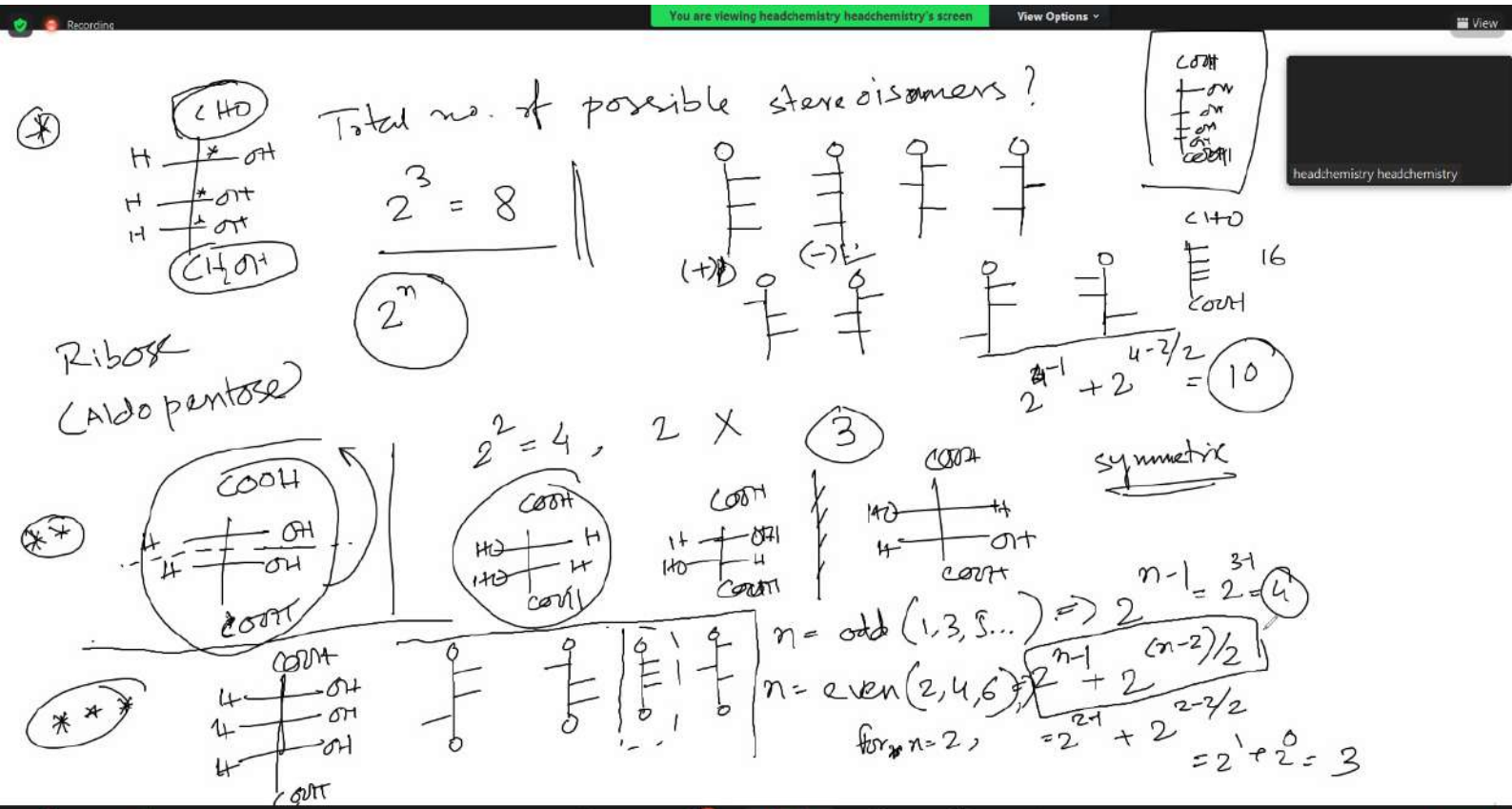
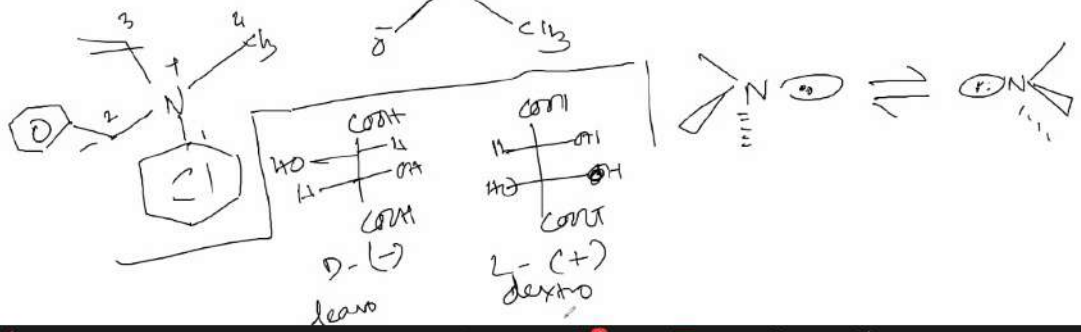




Compounds 'C-' chiral

'Quaternary ammonium salts'

→ 'N-' chiral center



Helix :-

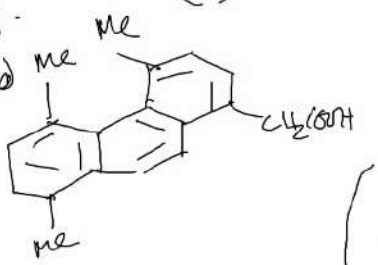
P / M

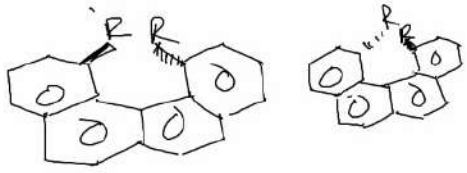
anti-clock

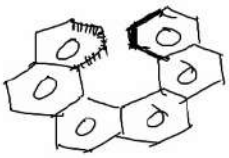
M(−)

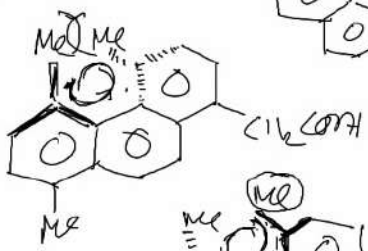
P(+)

4,5,8-trimethyl-1-phenanthrylic acid

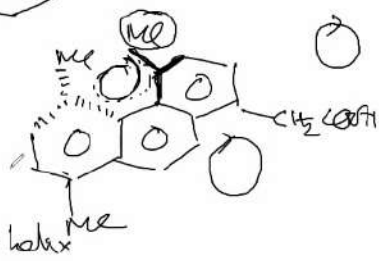






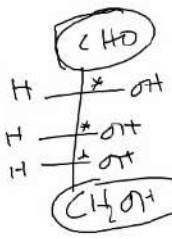


M-helix



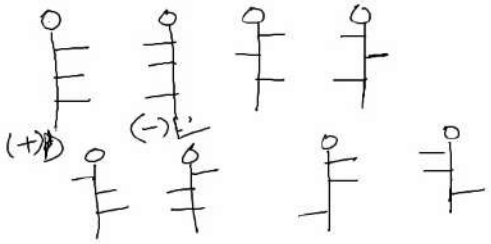
P-helix

(*) Total no. of possible stereoisomers?



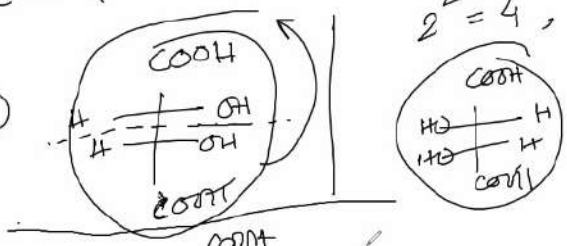
$2^3 = 8$

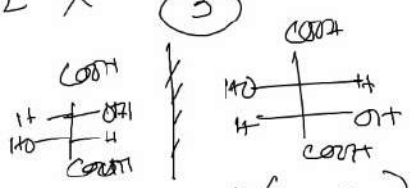
2^n



Ribose
(Aldopentose)

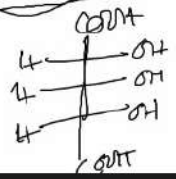
(**) $2^2 = 4$, 2 X (3)





symmetric

(***)



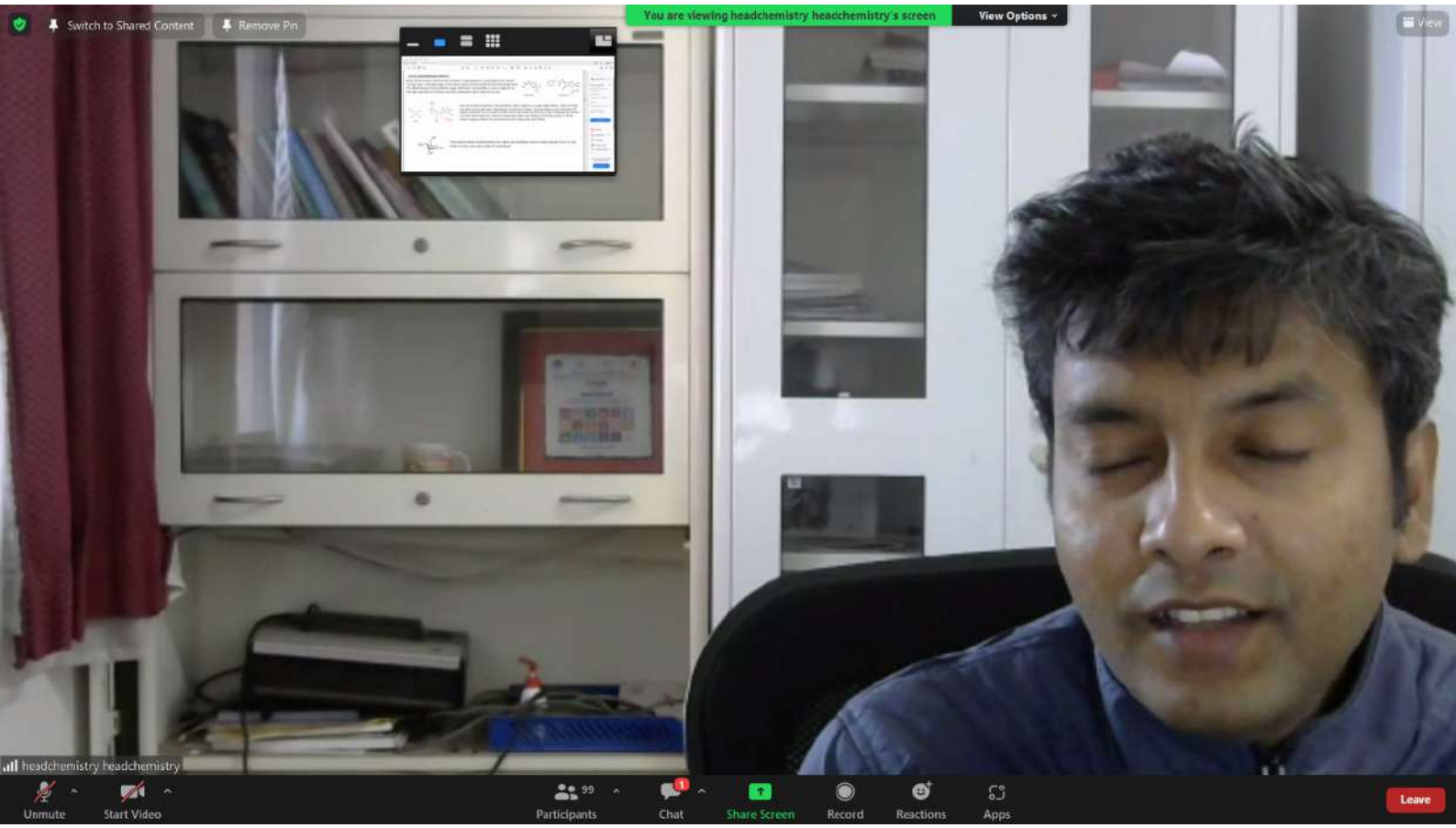
$n-1$

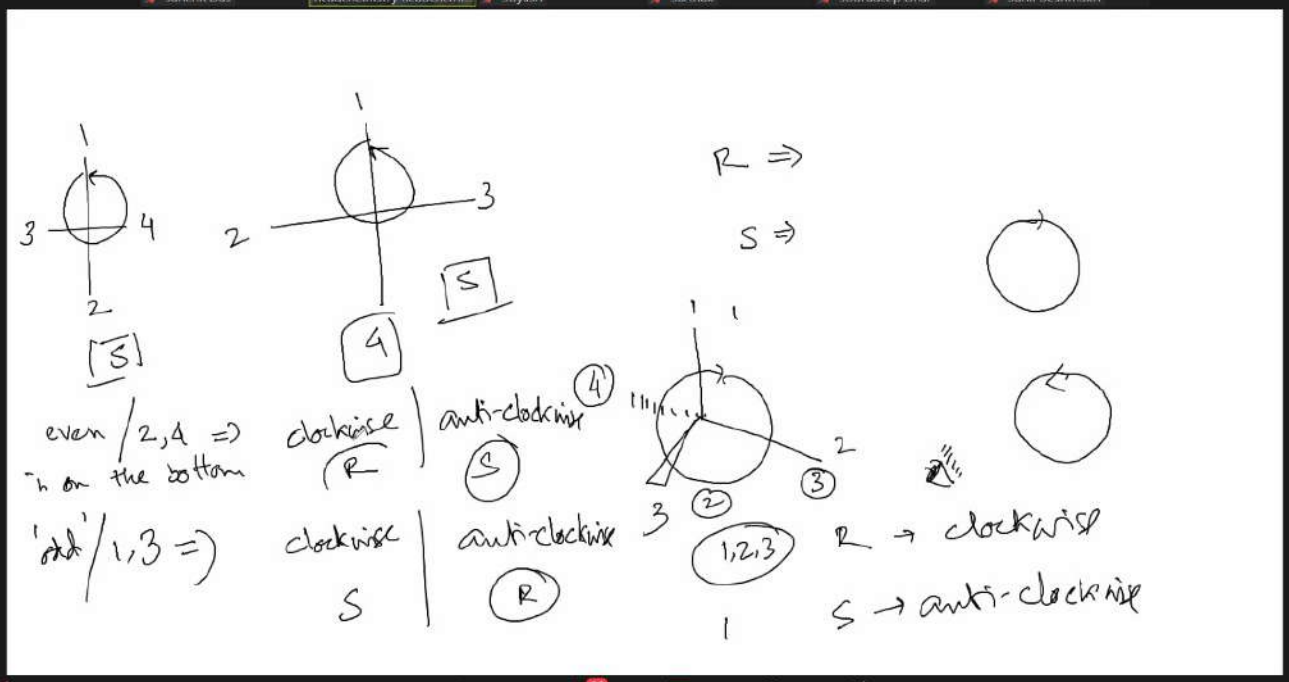
n = odd (1, 3, 5...) $\Rightarrow 2^{n-1}$

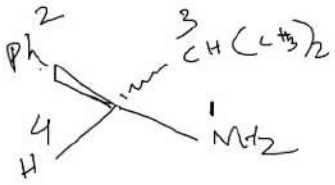
n = even (2, 4, 6...) $2^{n-1} + 2^{(n-2)/2}$

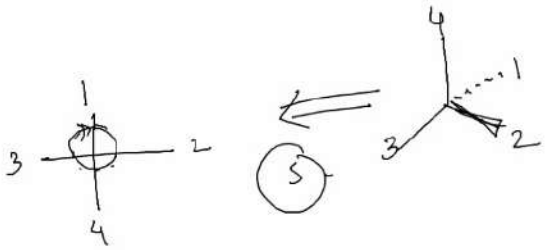
for $n = 2$, $= 2^{2-1} + 2^{2-2/2}$

$= 2^1 + 2^0 = 3$


Switch to Shared Content
Remove Pin
You are viewing headchemistry headchemistry's screen
View Options
View
headchemistry headchemistry
Unmute
Start Video
99
Participants
Chat
Share Screen
Record
Reactions
Apps
Leave



(4) 

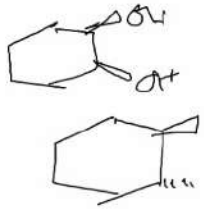


(5) D-glyceraldehyde ?

(6) D-tartaric acid !

(7) cis - cyclohexane- 1,2-diol

(8) trans- cyclohexane- 1,2-diol



Bayer's theory

1890

B.A. 109.5°

Deviation

Angle strain

cyclopropane	60°	109.5° − 60° = 49° 5′	24.75°
cyclo butane	90°	109.5 − 90° = 19° 5′	9.75°
cyclopentane	108°	109.5 − 108° = 1° 5′	0.75°
cyclohexane	120°	109.5 − 120° = −10.5°	5.25°

C-C cyclopentane

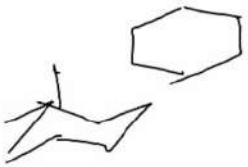
∠C-C sigma bond

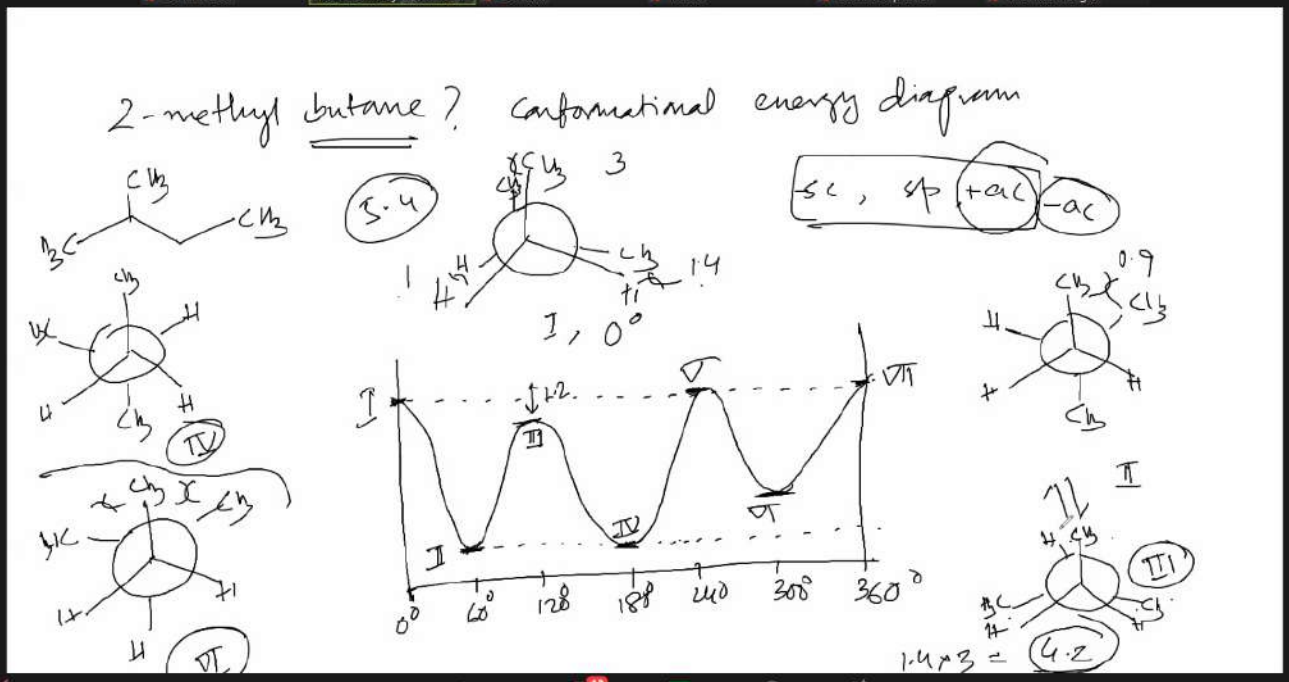
Bayer strain theory

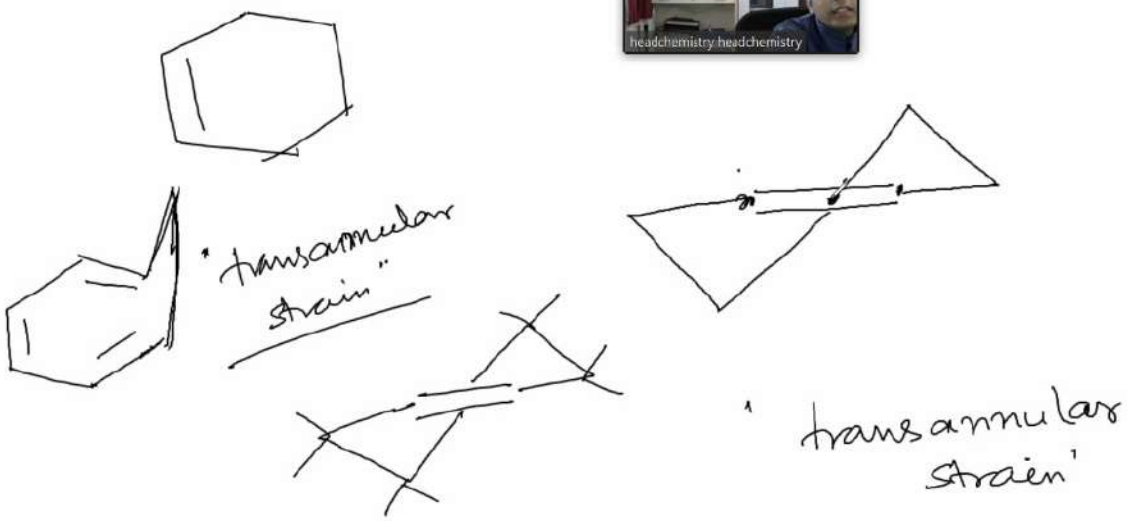
5 > 6 > 4 > 3

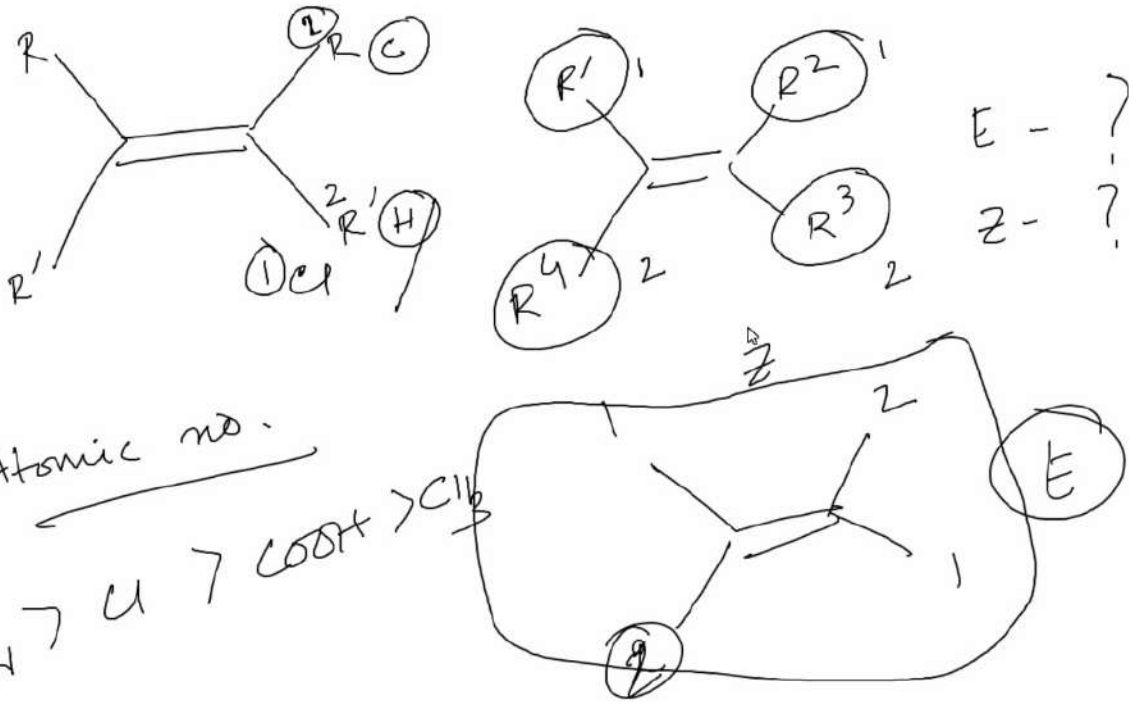
Drawbacks:

1. Not able to explain the case for larger ring
2. cyclopentane is more stable than cyclohexane
3. larger ring system are not planar, rather wrinkled or puckered








R
R
C
R'
H
Cl
R'
R²
R³
R⁴
E - ?
Z - ?
Atomic no.
Br > Cl > COOH > CH₃
Z
E


Sanchit Das
Sanchit Das
headchemistry headchemistry
Dilraj pakad
Diya jasmine M
Diya jasmine M
Prince Raj

Bayer's theory

1890

	B.A. 109°	Deviation	Angle strain
cyclopropane	60°	49° 5'	24.75°
cyclo butane	90°	19° 5'	9.75°
cyclopentane	108°	1° 5'	0.75°
cyclohexane	120°	−11°	−5°

Bayer strain theory

5 > 6 > 4 > 3

2×3 − 180°, 360°, 540°, 720°

2×3 − ?