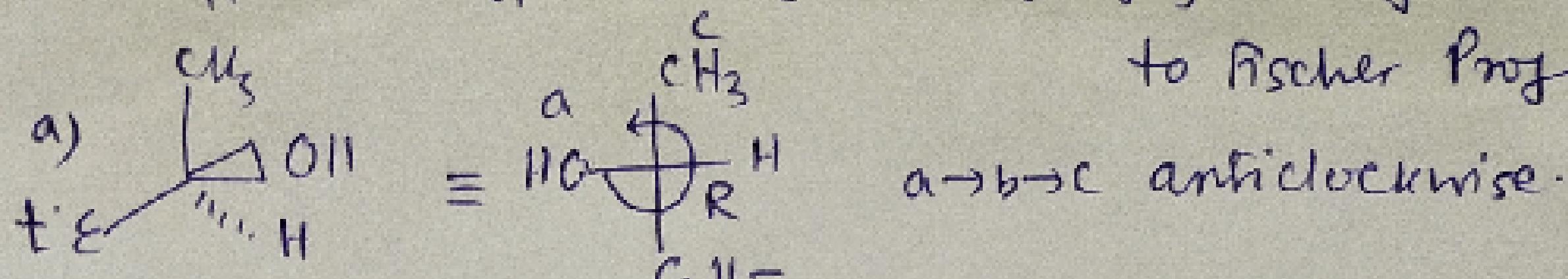
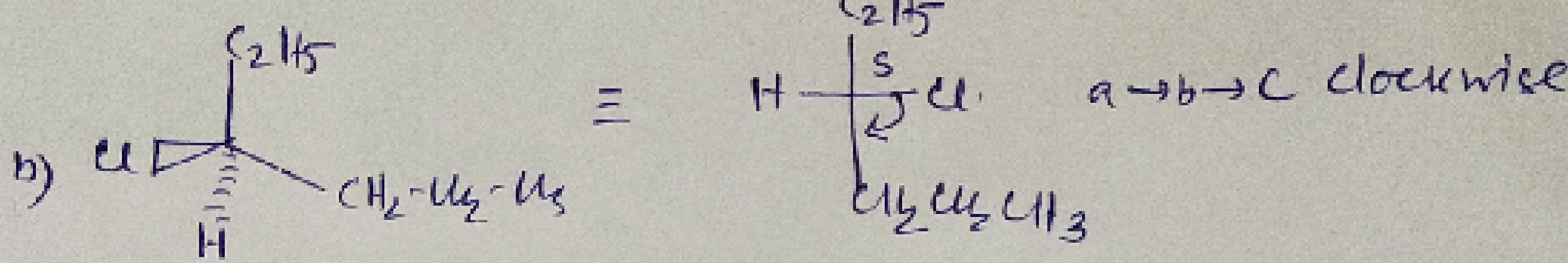


different types of projection (Fischer Projection)

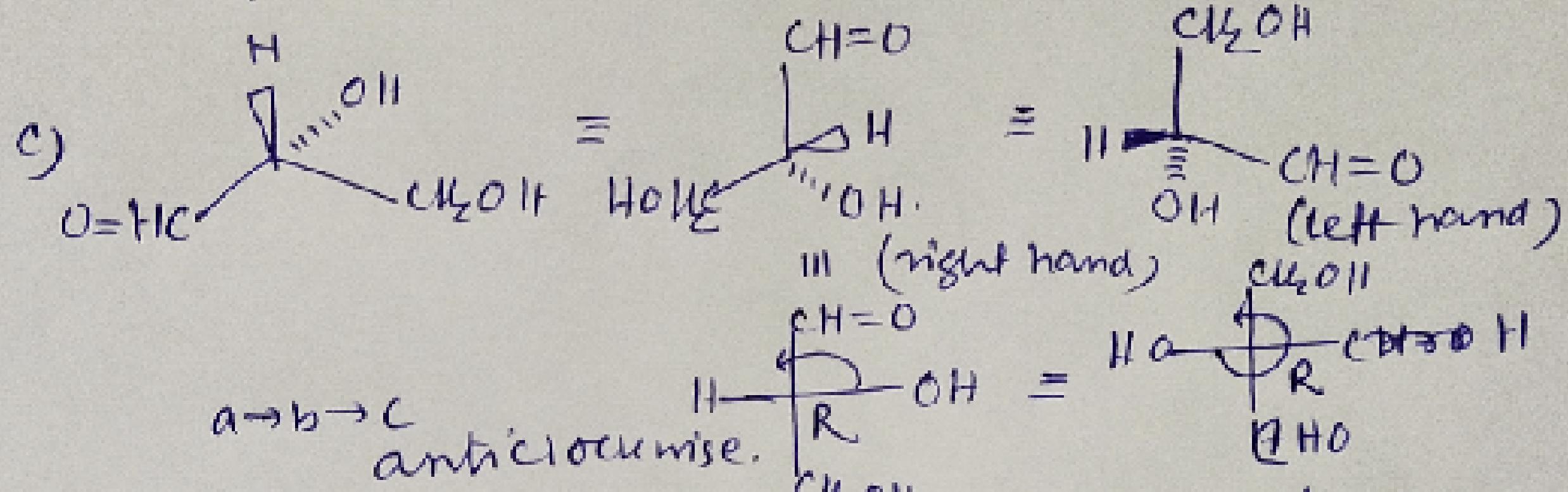
to Fischer Projector ①



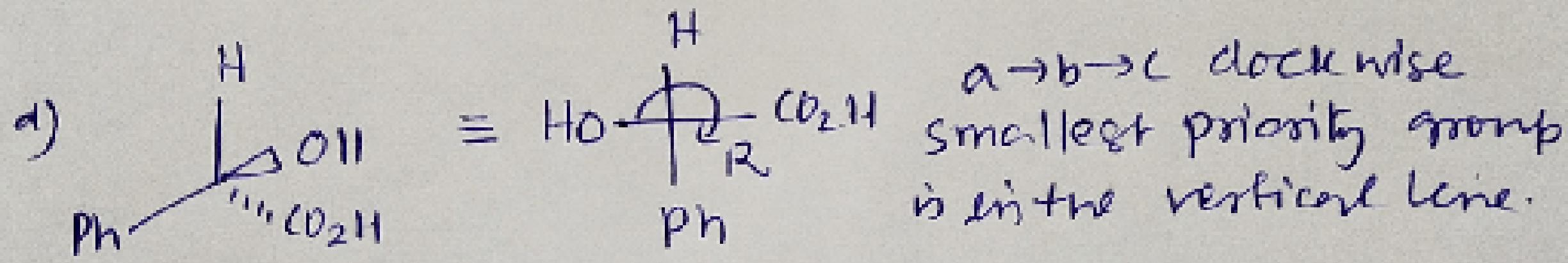
right hand:



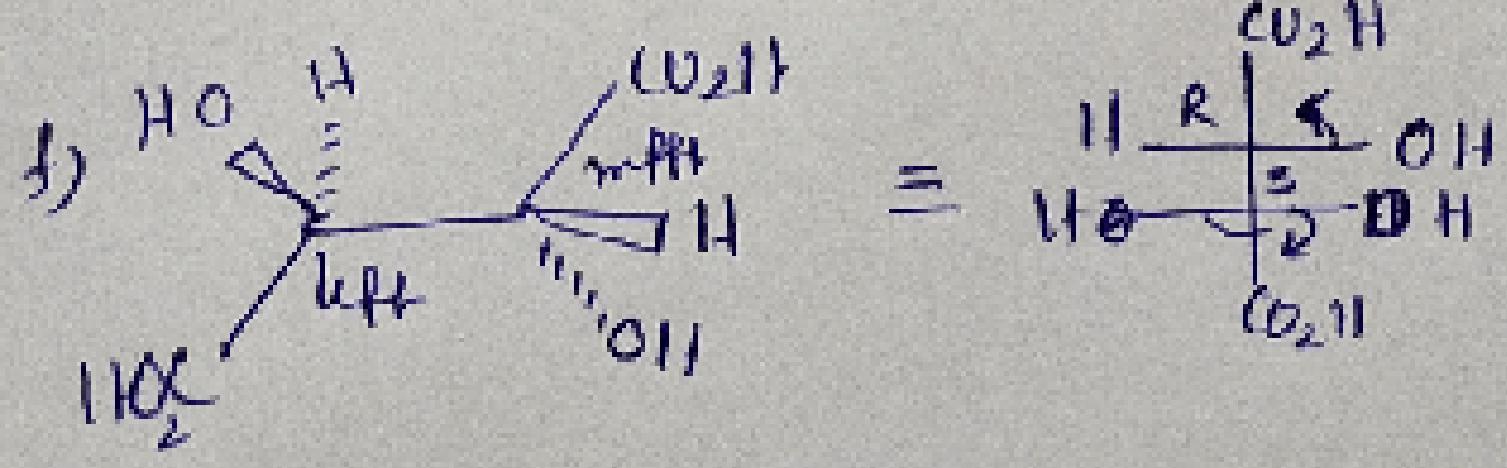
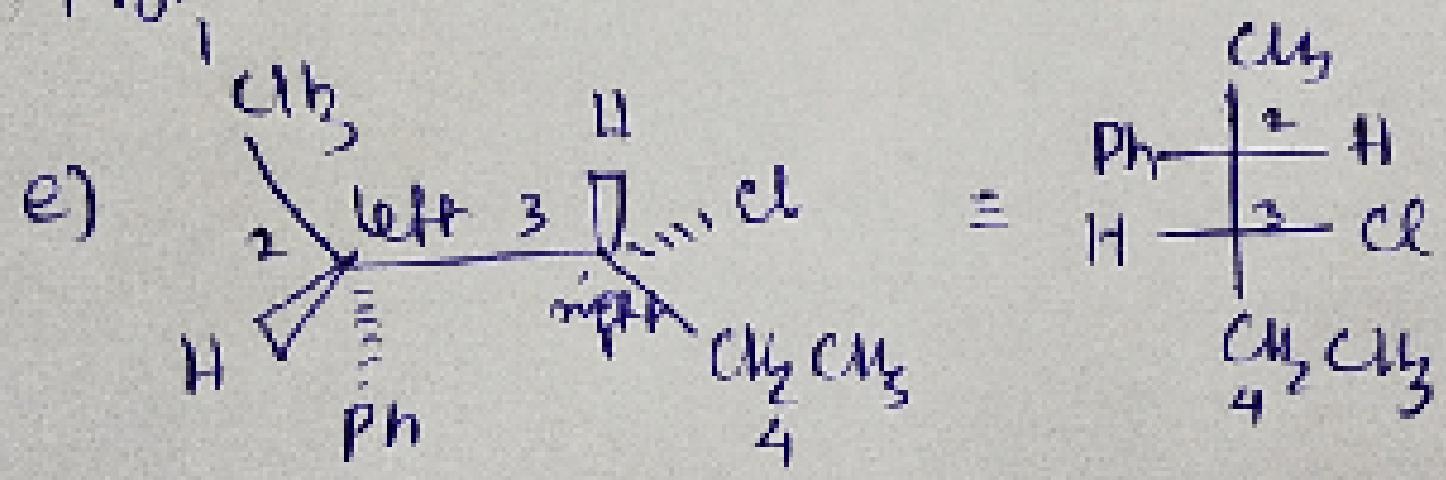
left hand:

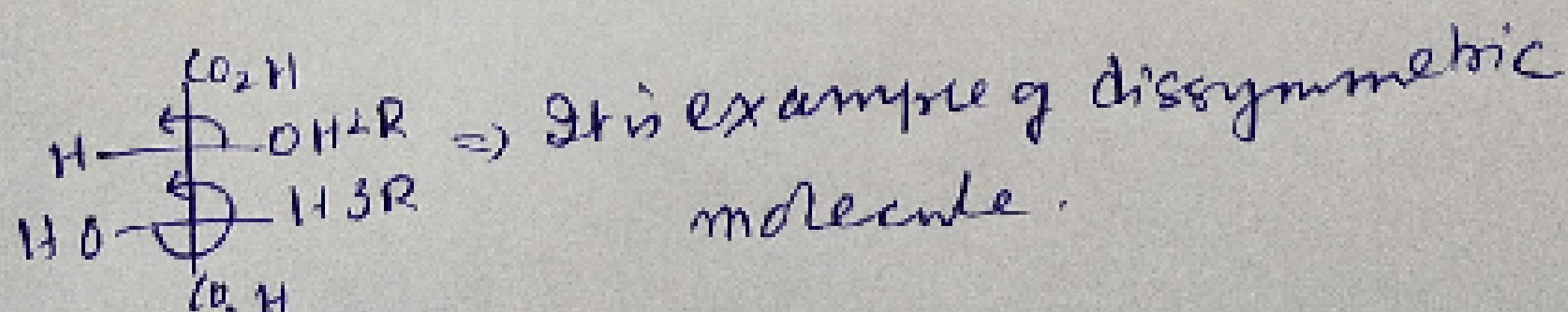
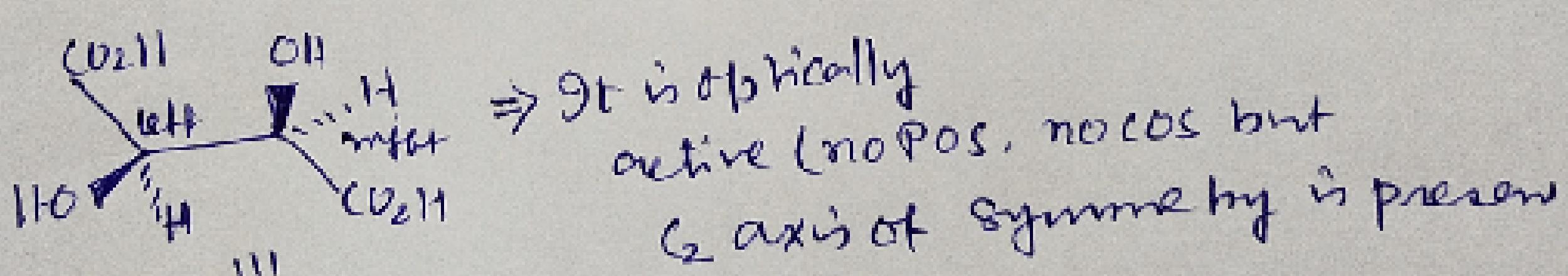
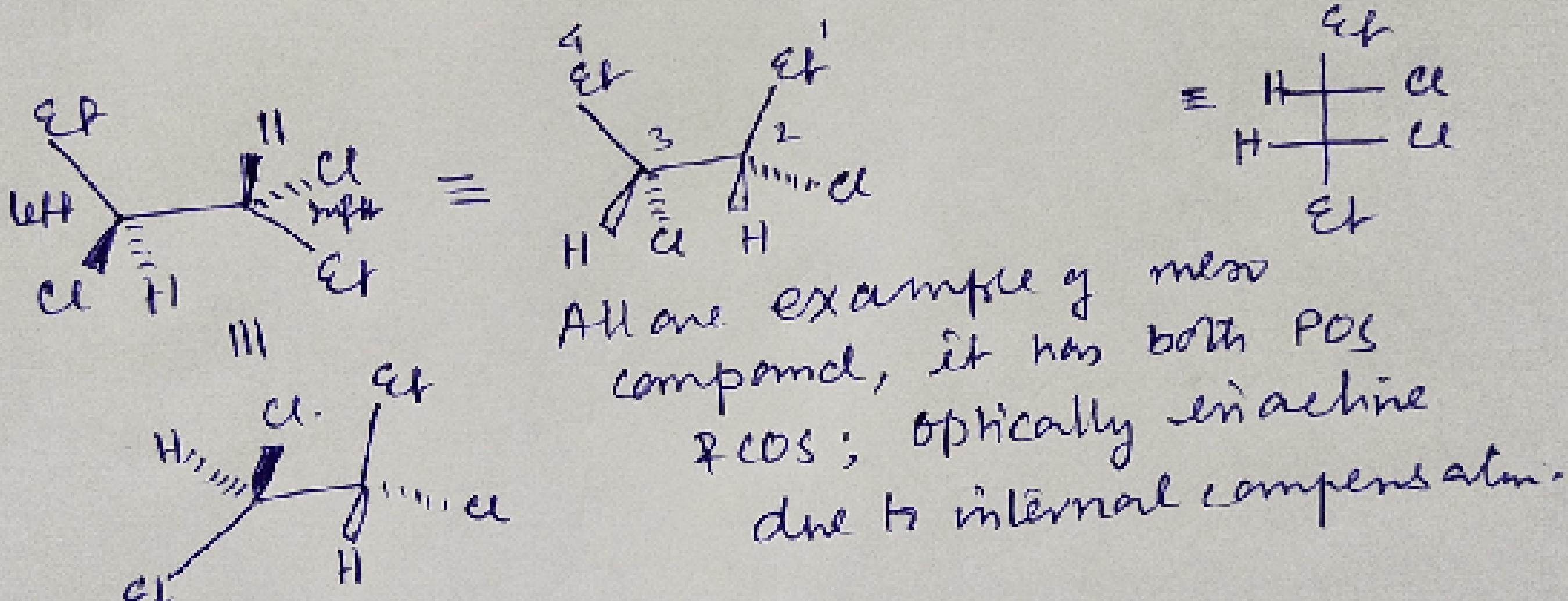
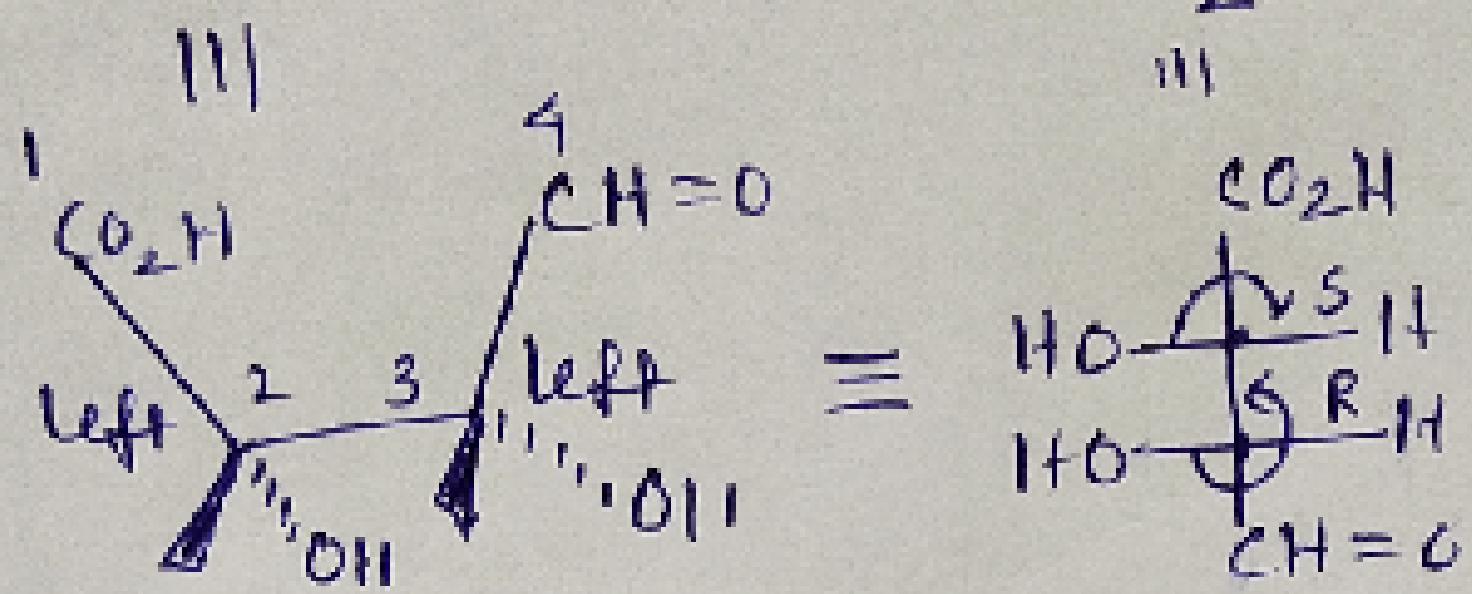
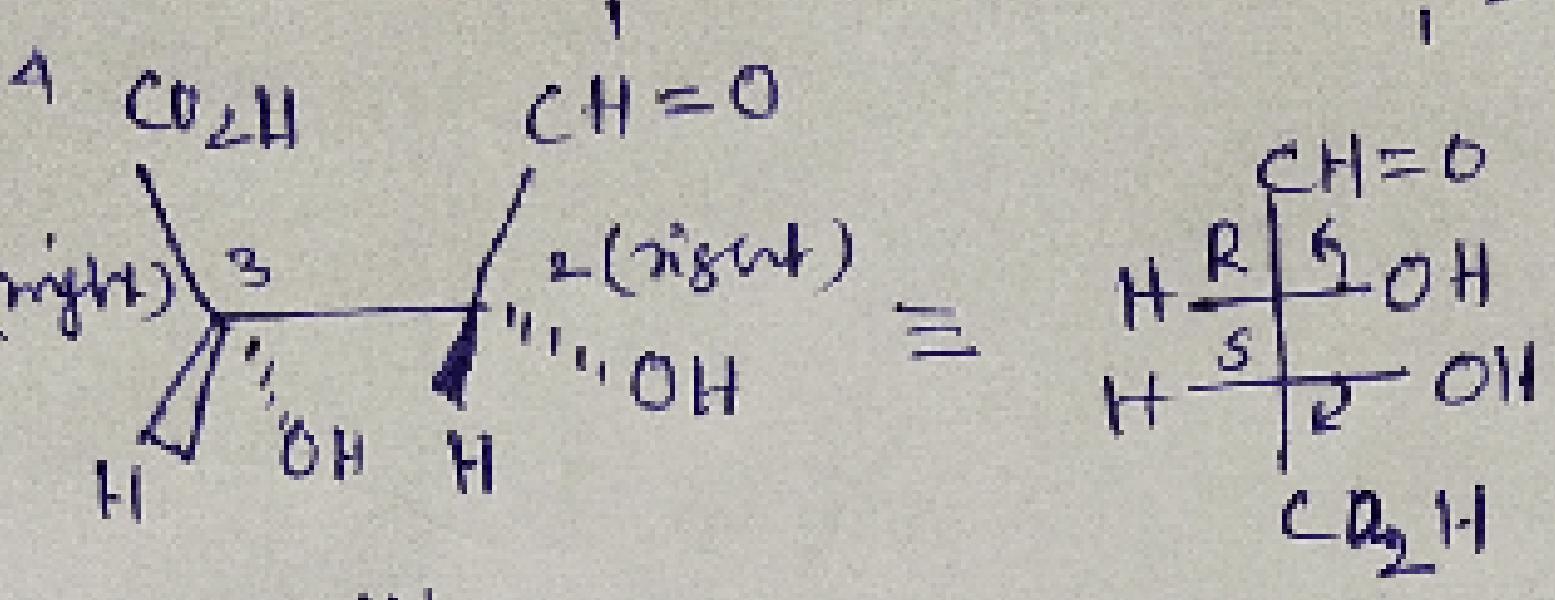
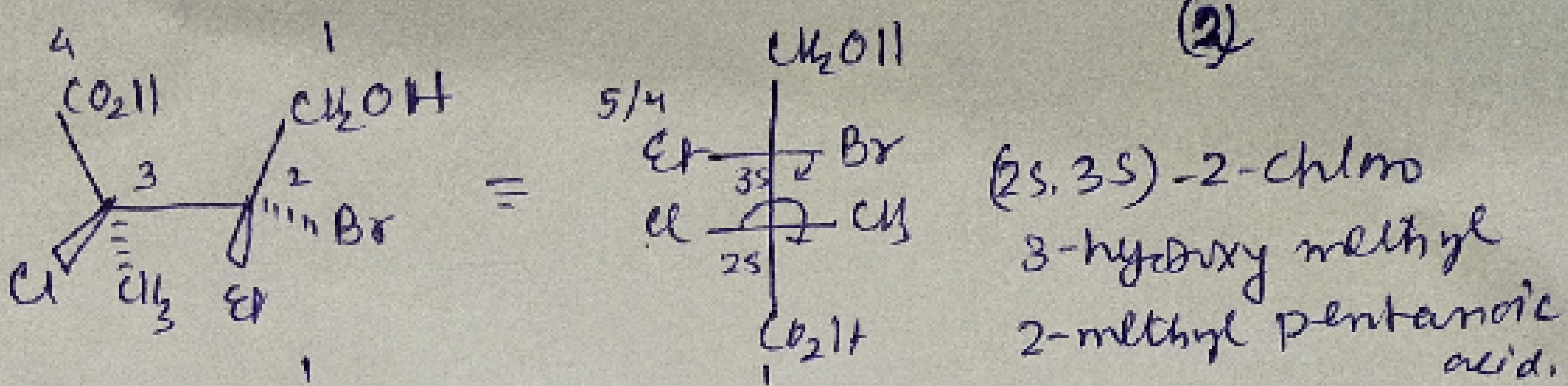


Two times inter change of any 2 groups along the same chiral centre give identical configuration



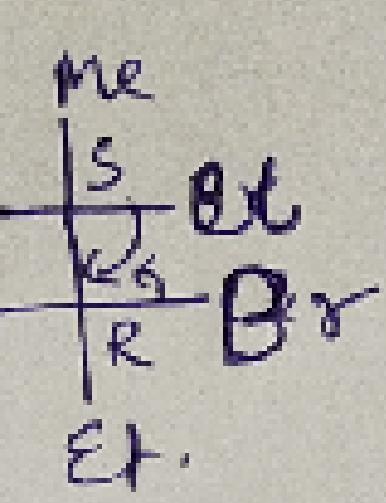
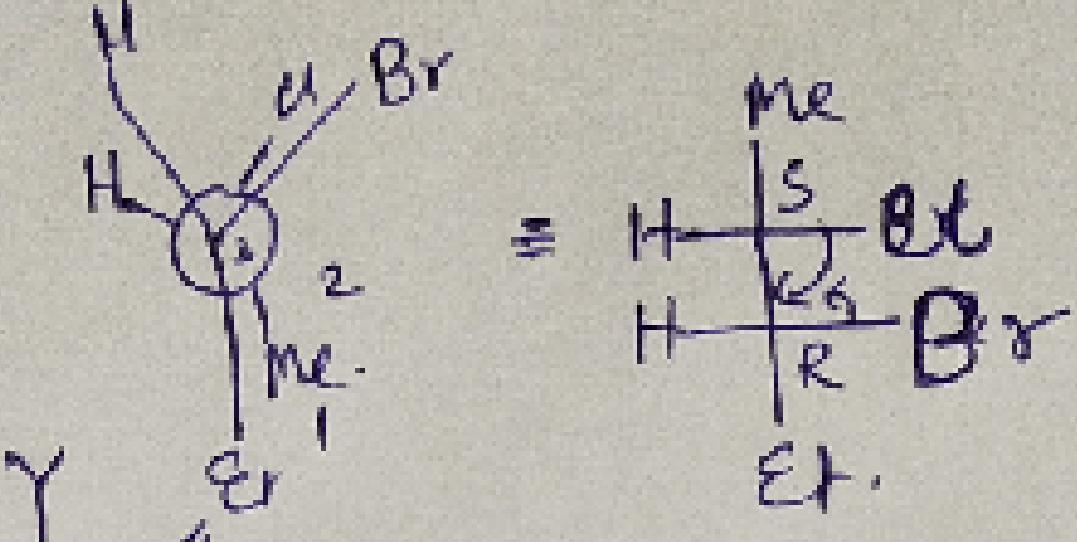
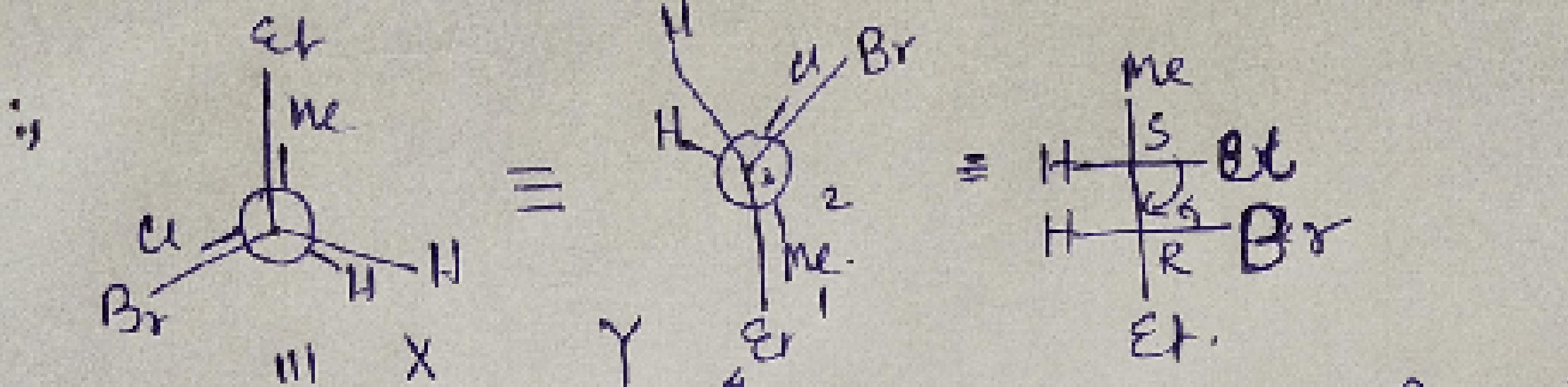
Right ~~left~~ hand:



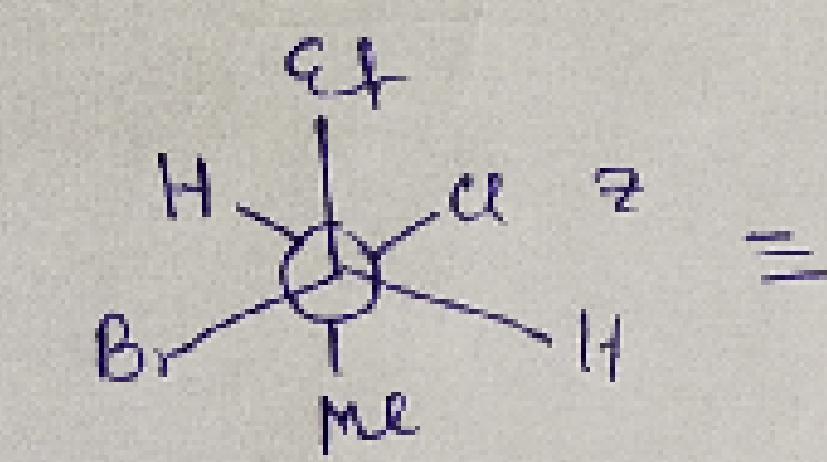


## Newman Projection to Fischer Projection

②



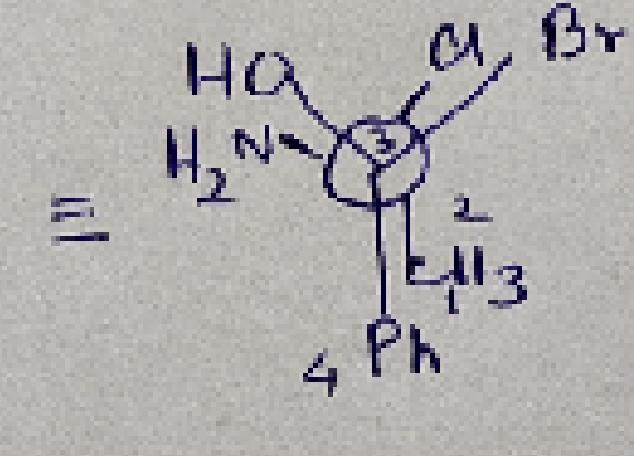
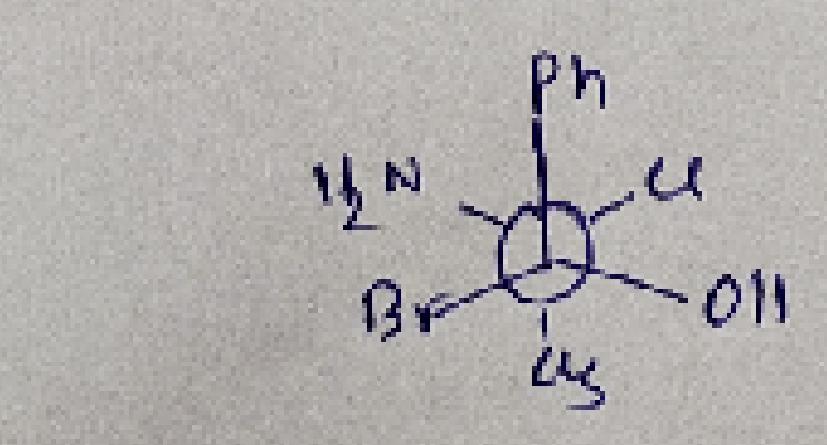
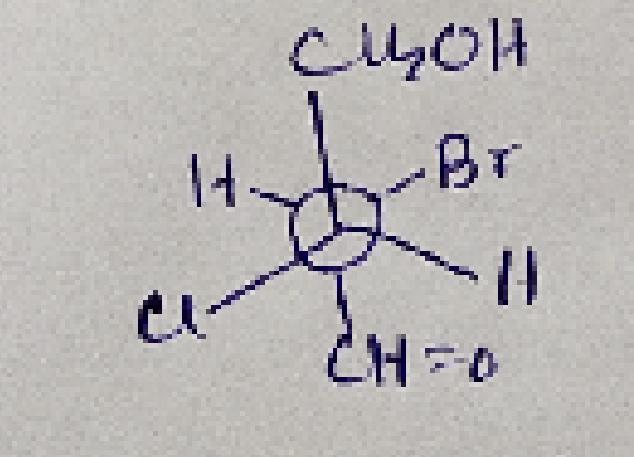
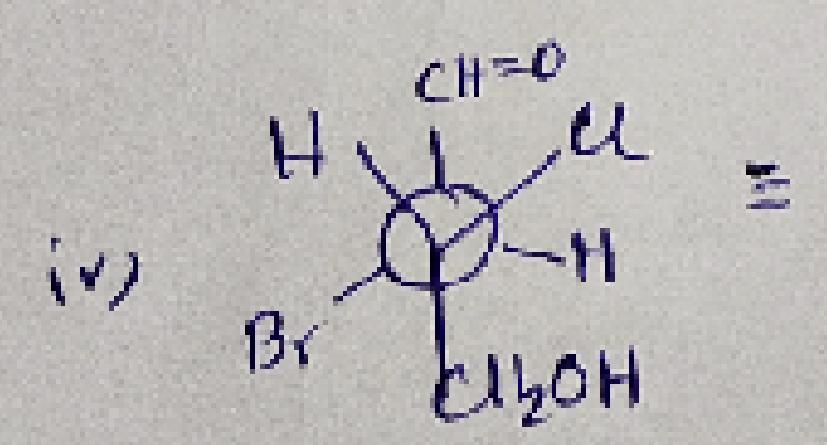
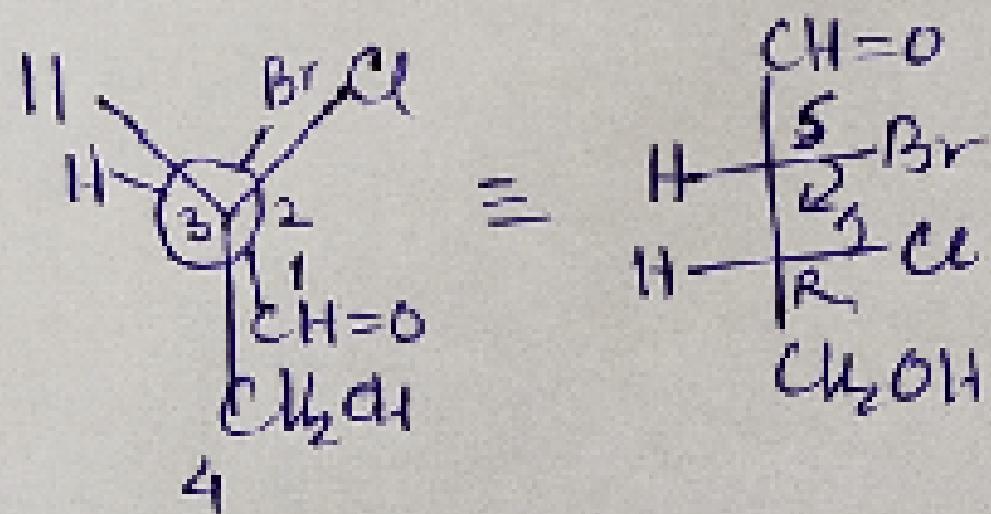
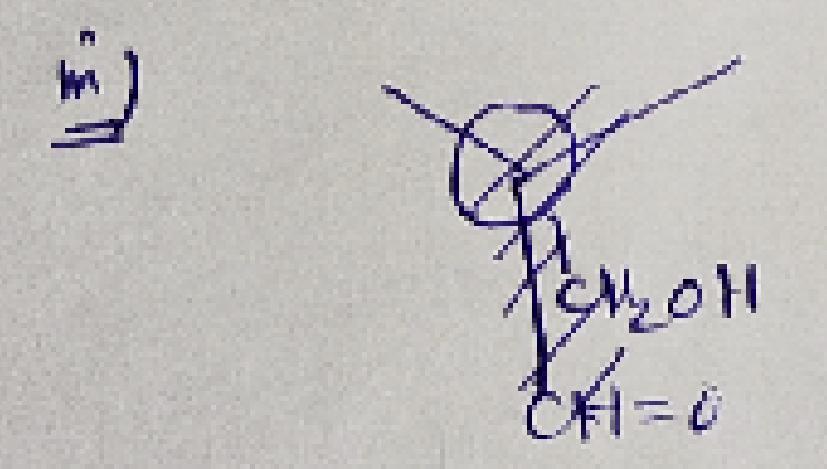
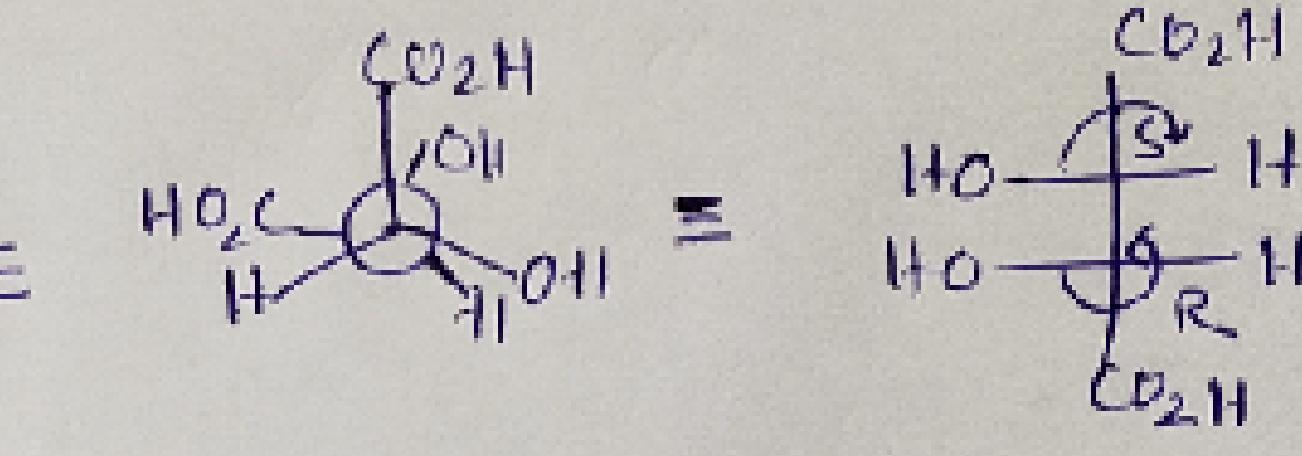
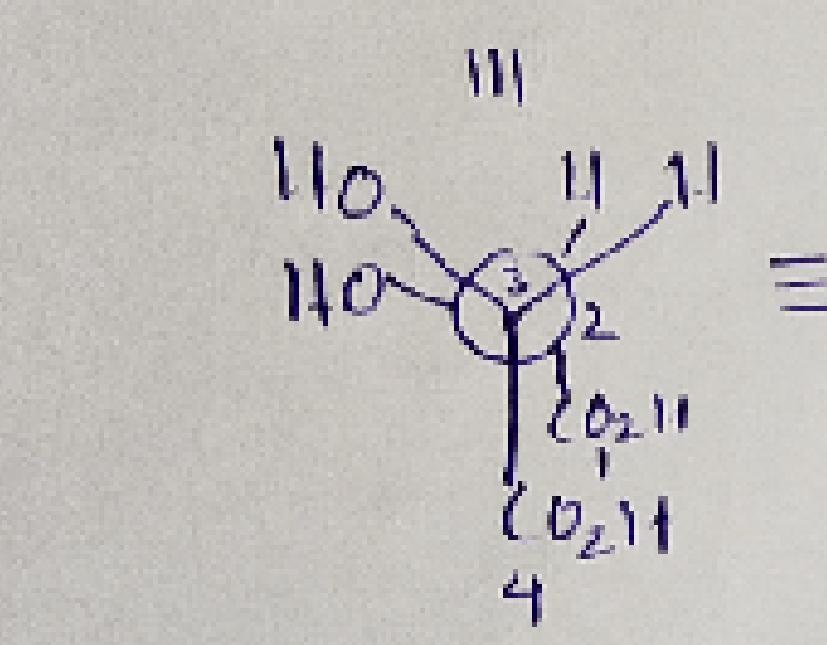
To convert with Fischer Projection the  
Relaxed conformation is written  
in the way  $\gamma$  is written. Here  $X = \gamma = 2$ .



$\equiv$

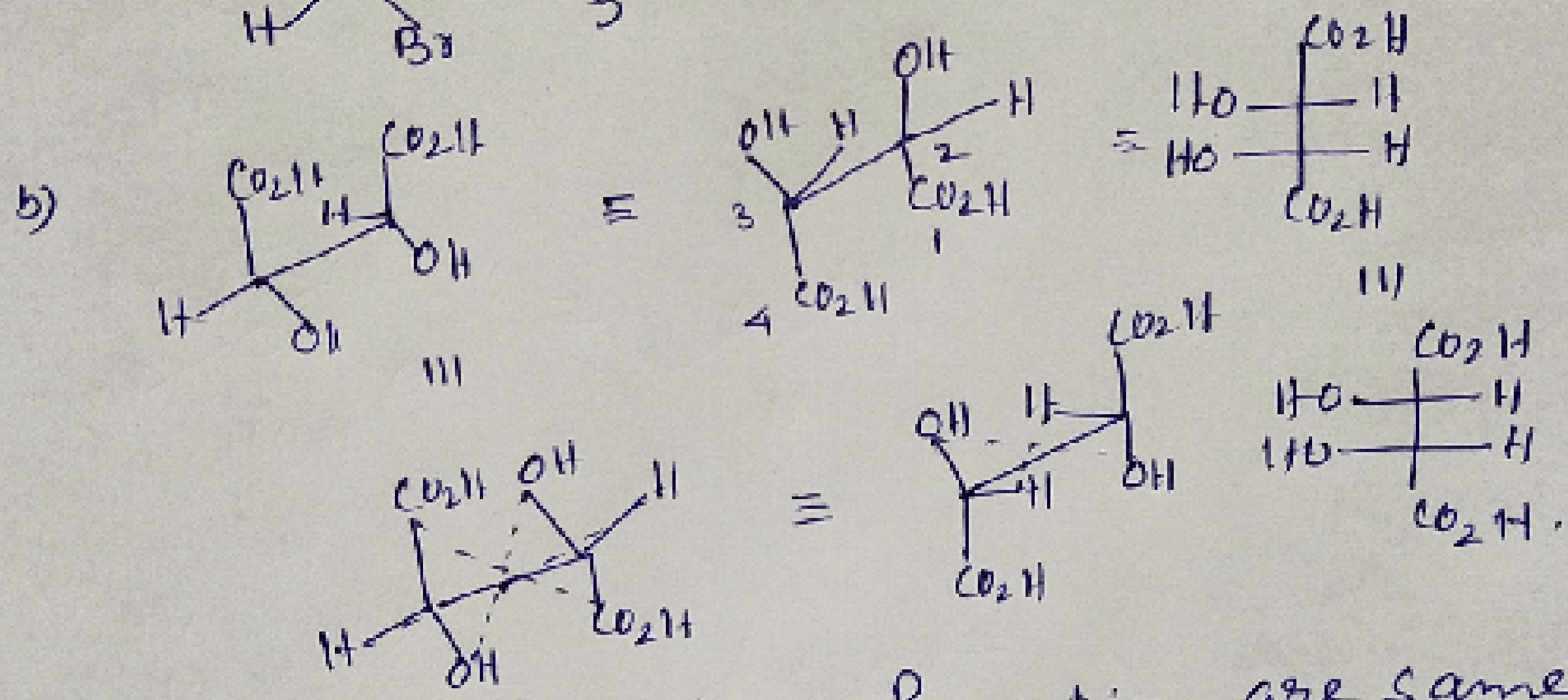
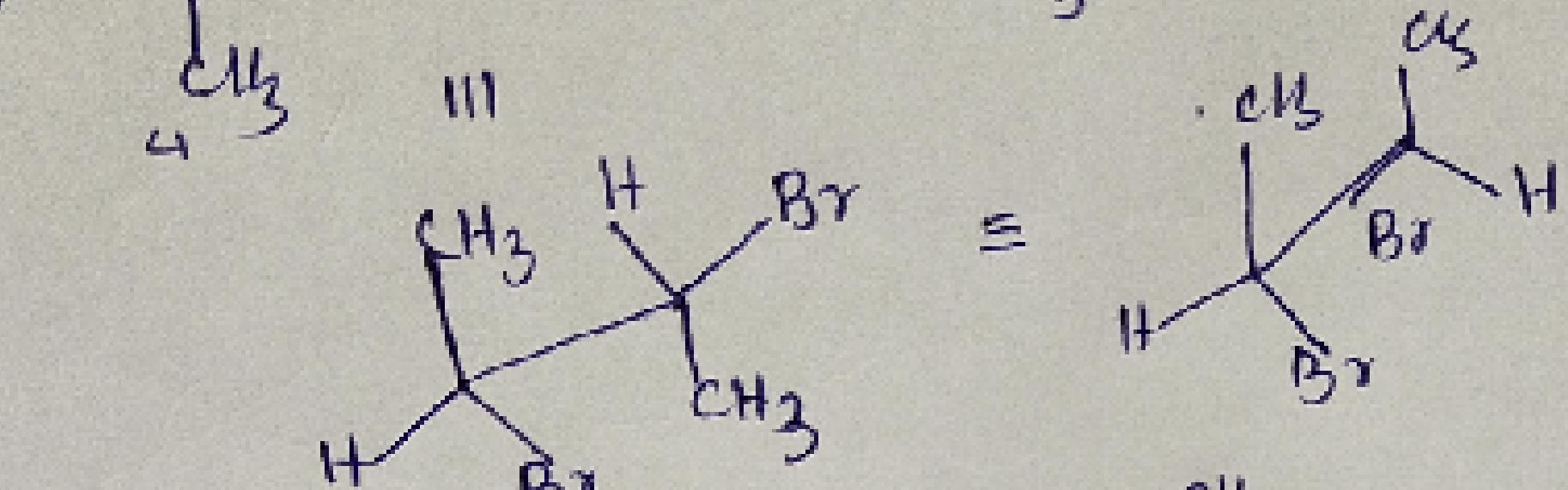
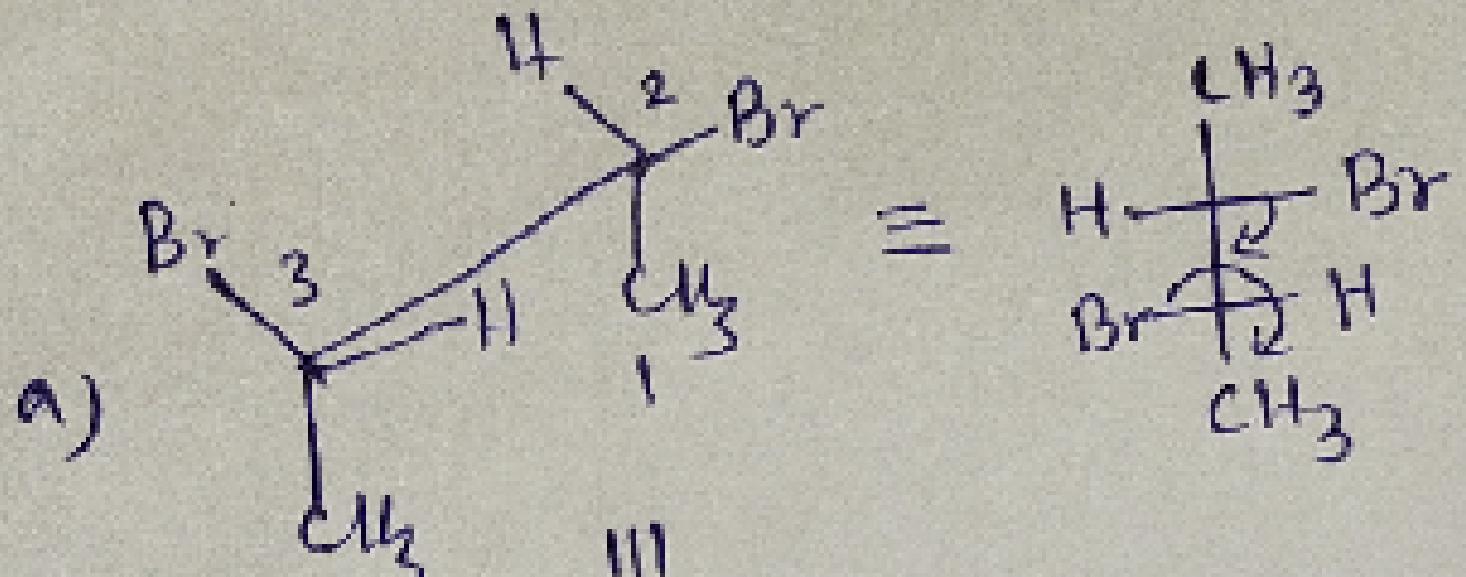
 $\text{Et} \quad \text{Br}$ 
 $\text{H} \quad \text{H}$ 
 $\text{Et} \quad \text{Me}$ 
 $\text{Br} \quad \text{H}$ 

Anti form / gauche form  
/ fully relaxed confor.  
parallel to same str.  
It has POS & COS both.

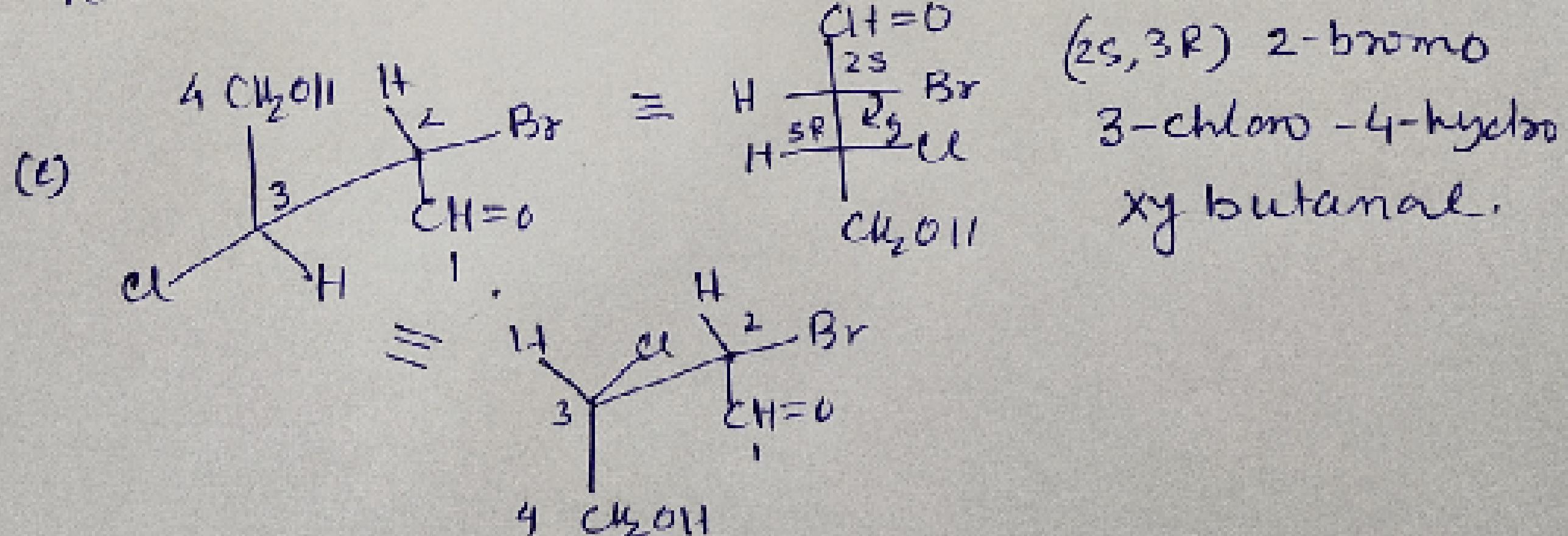


④

## Sawhorse Projection to Fischer Projection.

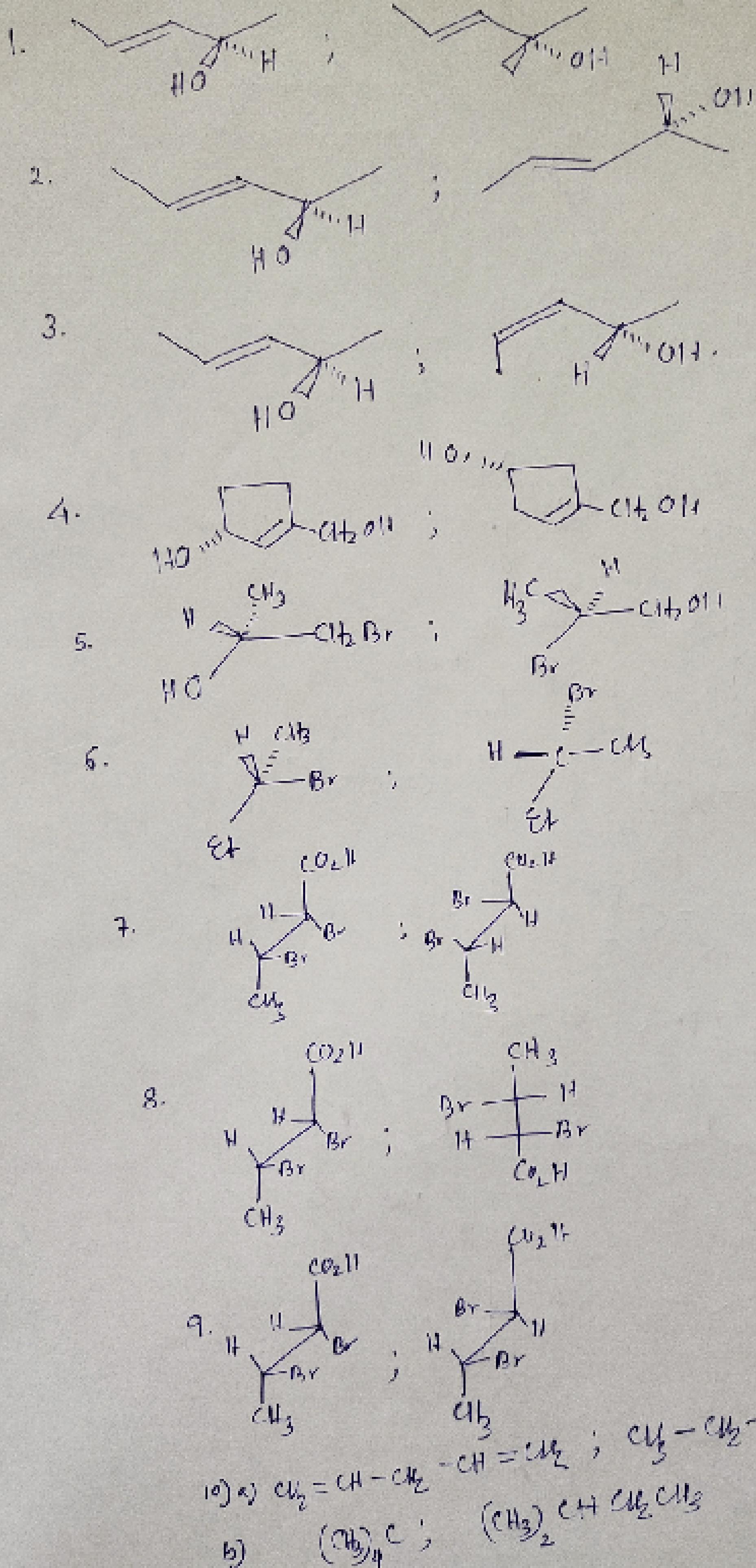


(b) All form of Sawhorse Projection are same & corresponds to same molecule which has POS & COS both, so they are optically inactive.



: Relationship between compounds:

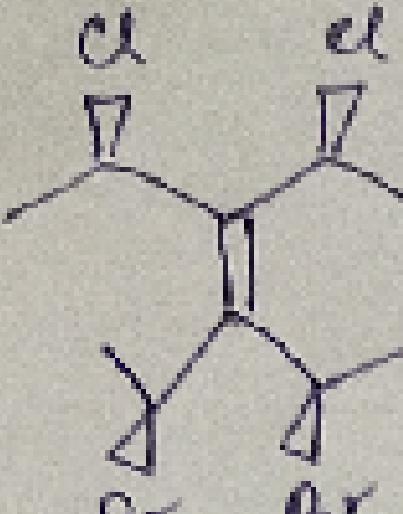
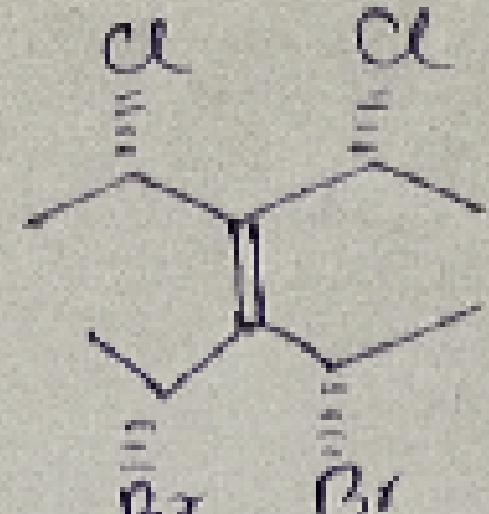
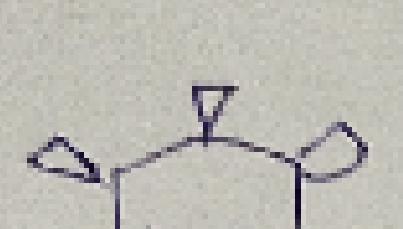
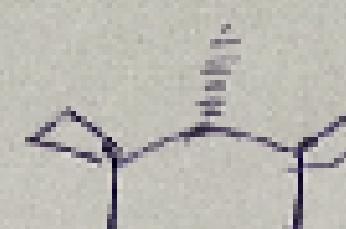
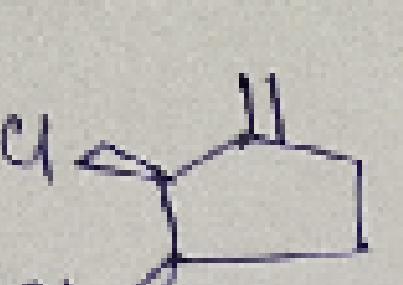
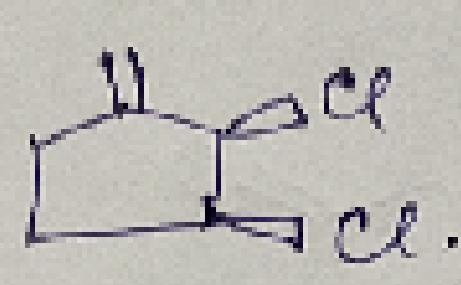
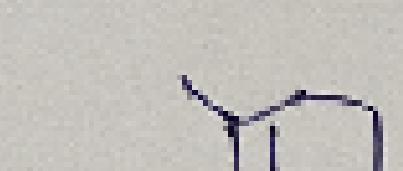
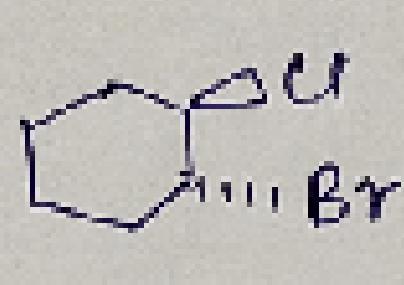
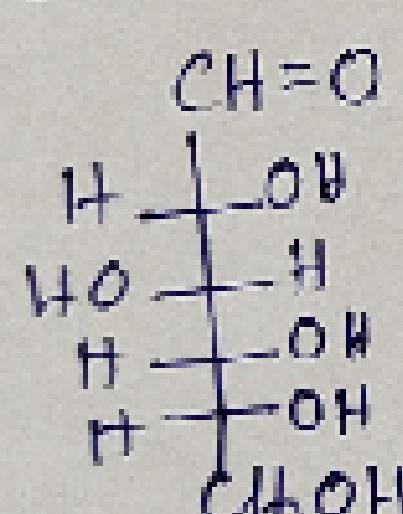
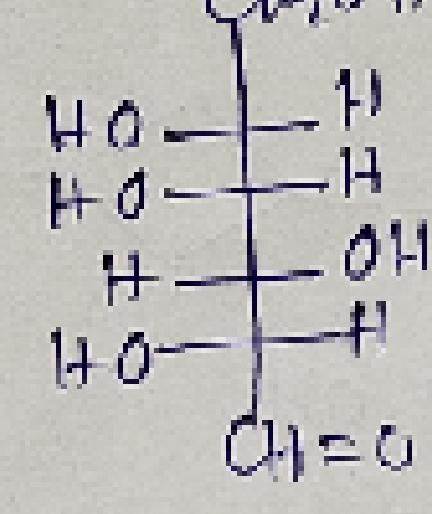
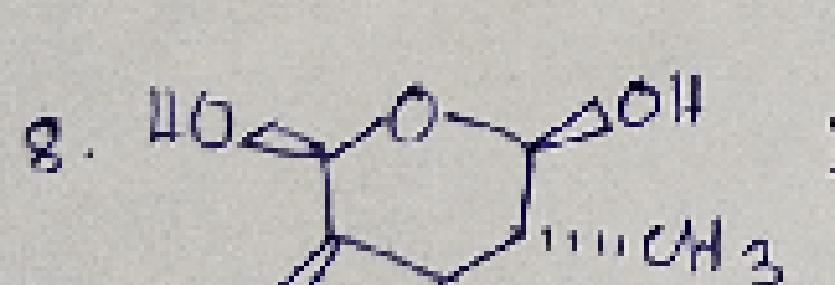
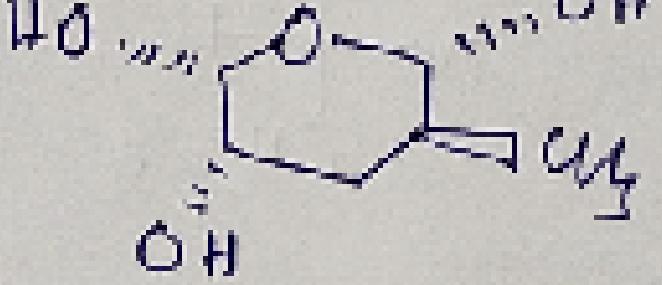
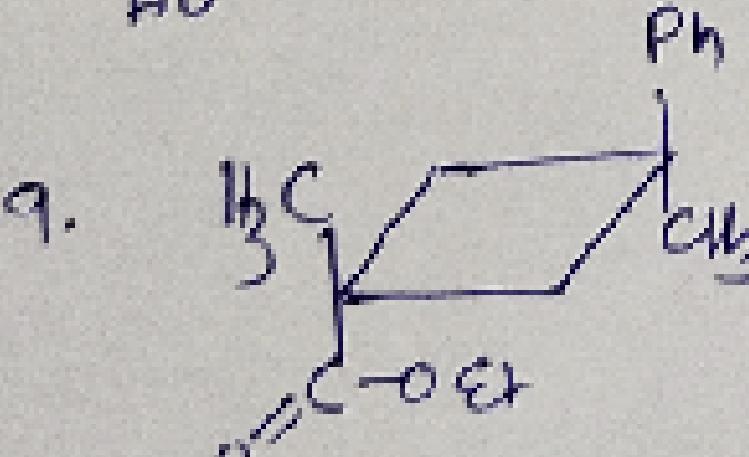
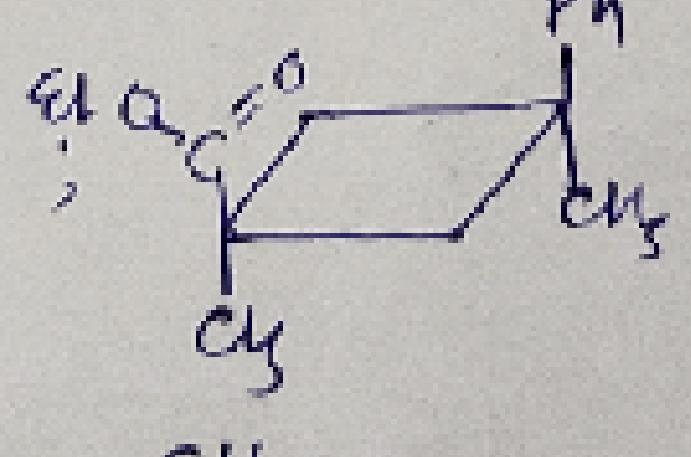
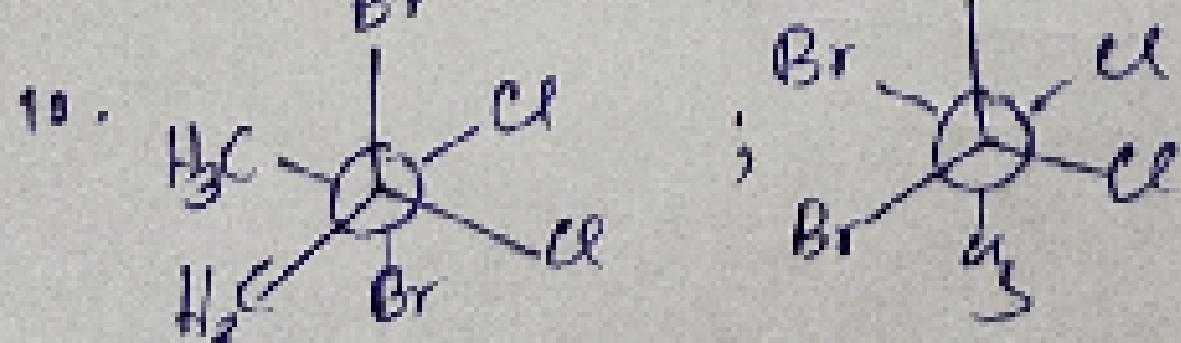
(5)



- (1) Enantiomer (6)
- (2) Identical.
- (3) Diastereomers.
- (4) Positional / structural / constitutional.
- (5) Positional / structural / constitutional.
- (6) Enantiomer.
- (7) Enantiomer.
- (8) Identical.
- (9) Diastereomers.
- (10) Structural / constitutional.  
(a)
- (11) Tautomers.
- (12) Geometrical Isomers.
- (13) Identical.
- (14) Diastereomers.
- (15) Tautomers / Anionotropy / Ring chain Tautomers.
- (16) Ring chain tautomers.
- (17) Enantiomers.
- (18) Geometrical Isomers / Diastereomers.
- (19) Metamers / Positional isomer.
- (20) Identical.
- (21) Diastereomers.
- (22) Identical.

: Relationship between compounds:

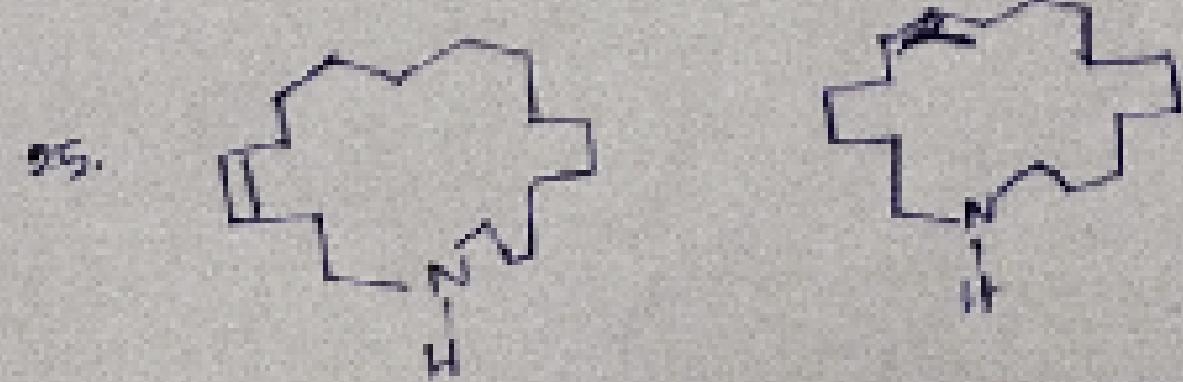
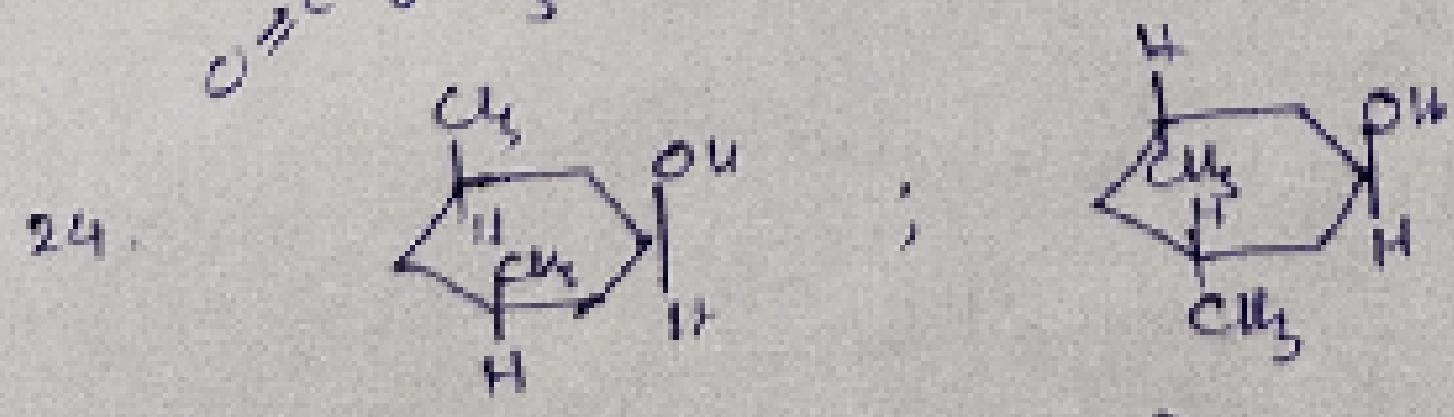
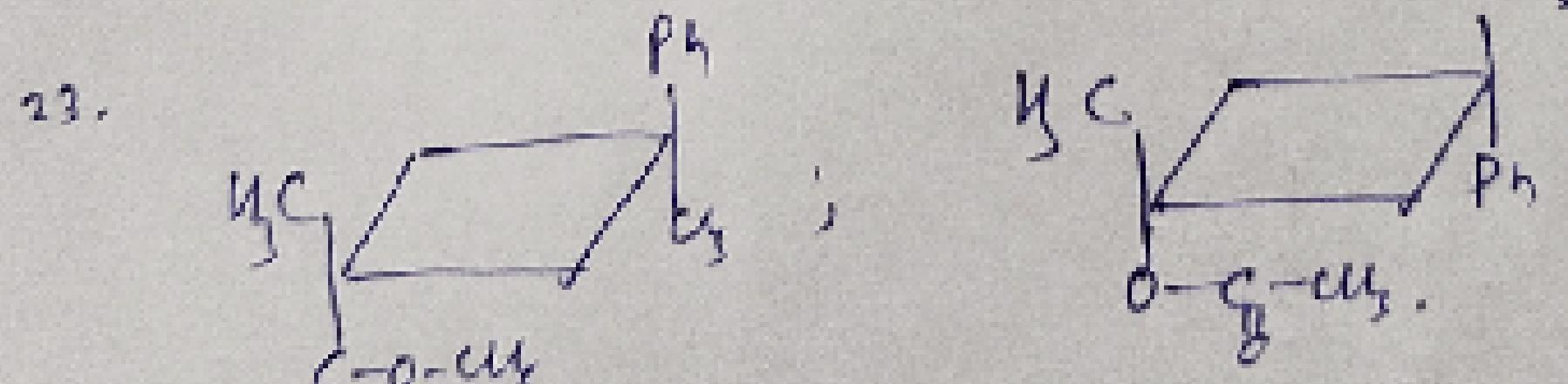
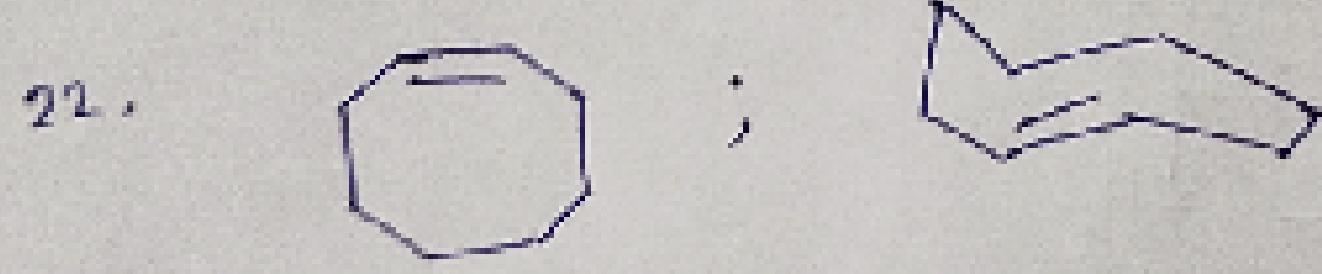
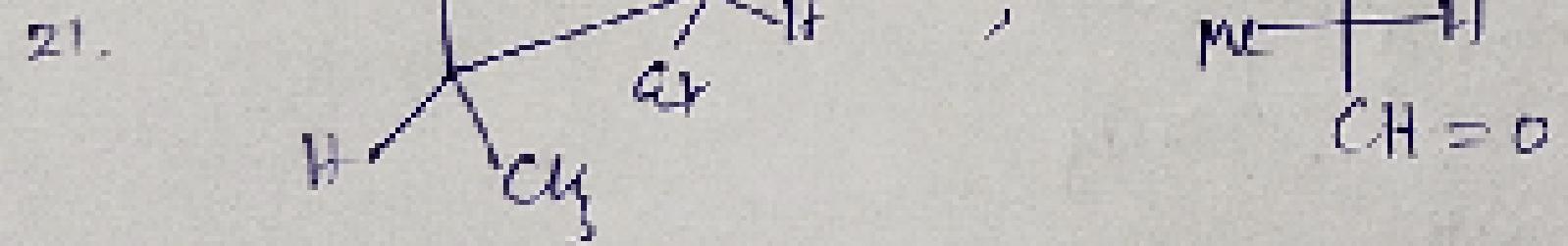
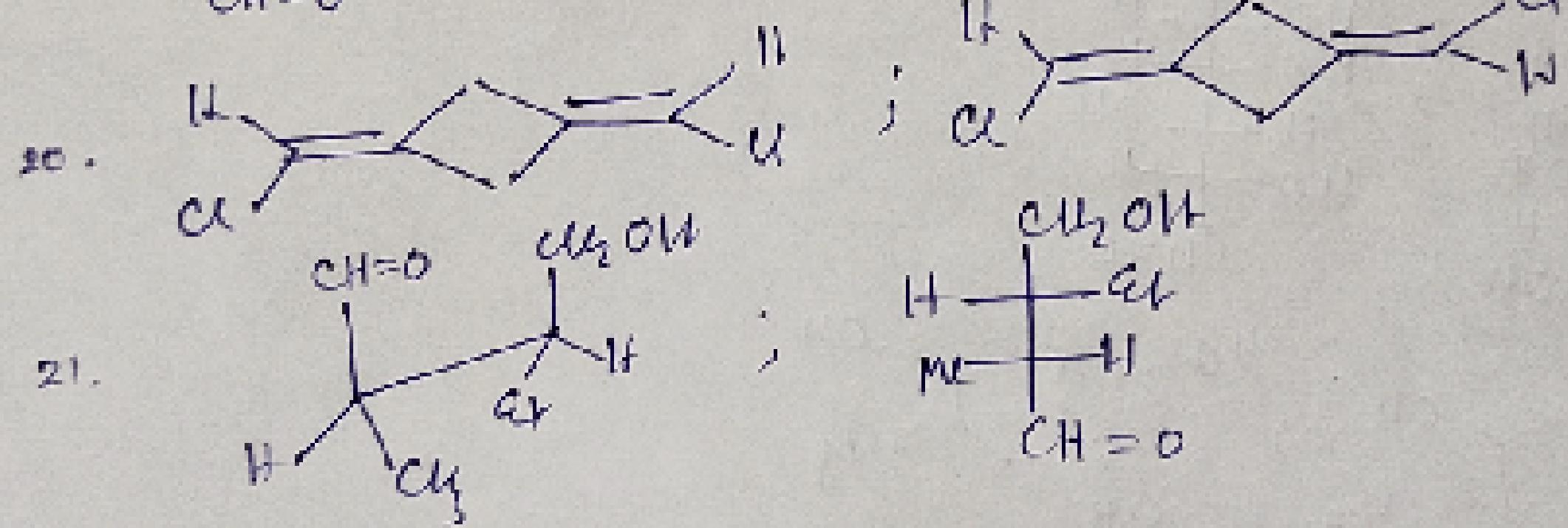
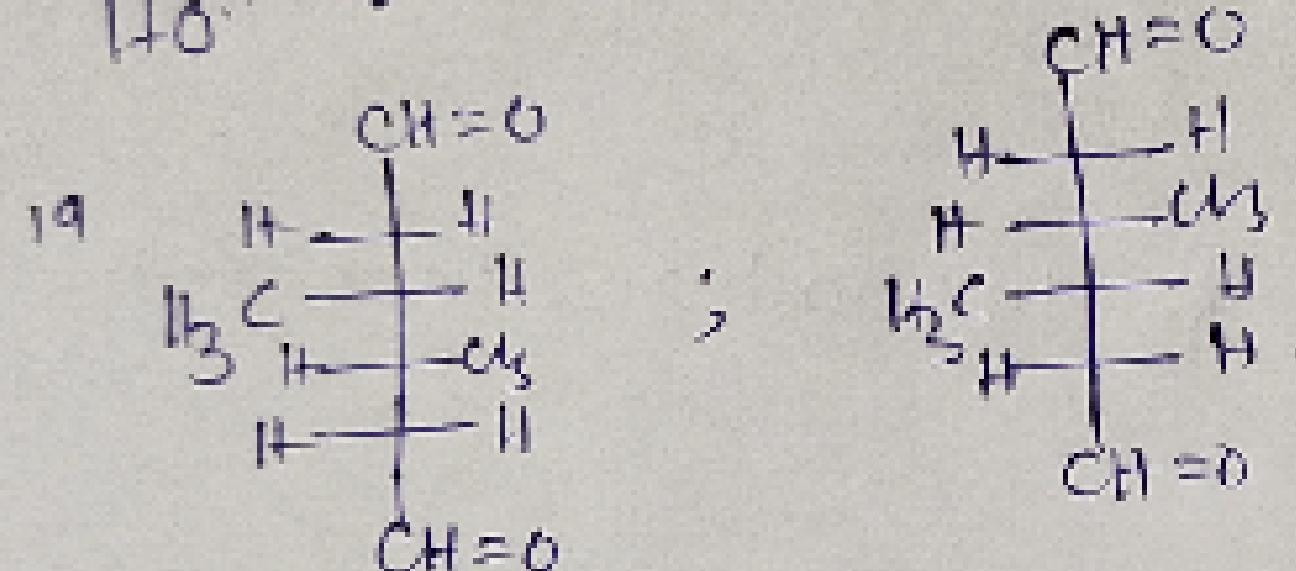
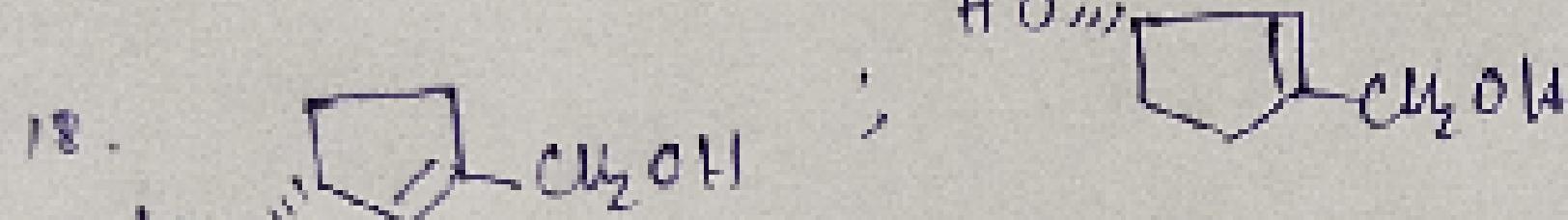
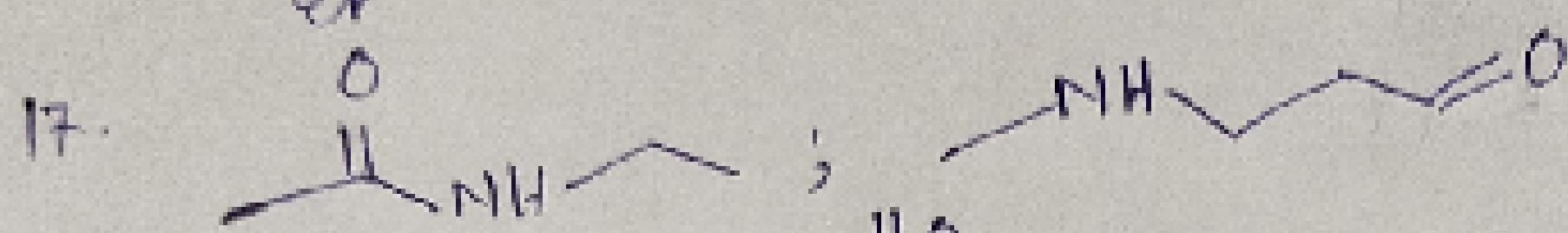
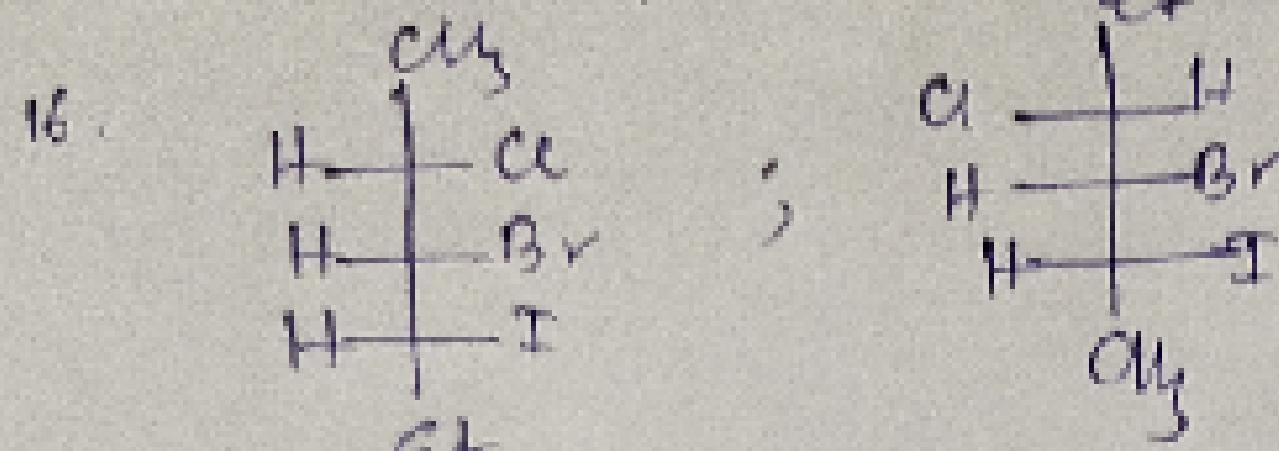
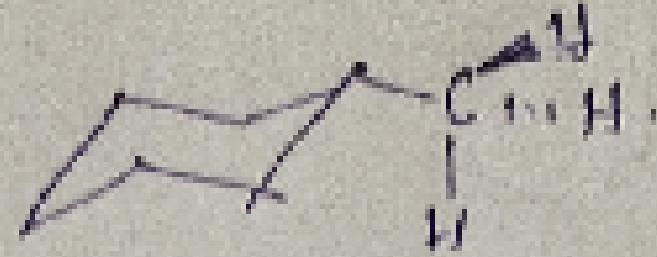
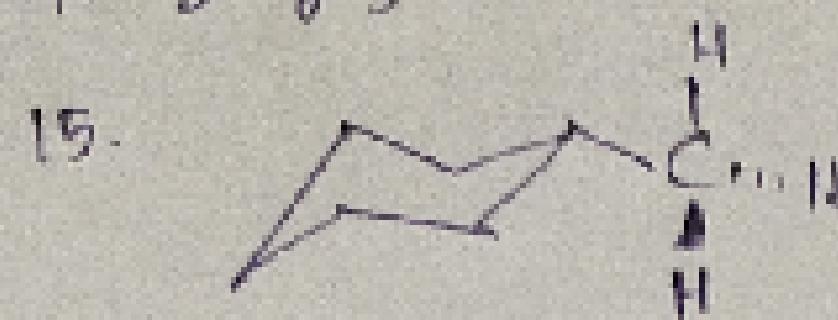
(7)

1.  ; 
2.  ; 
3.  ; 
4.  ; 
5.  ; 
6. (R)-4-bromo-Cis-2-hexene; R-4-bromo trans-2-hexene
7.  ; 
8.  ; 
9.  ; 
10.  ; 
11. Phthalic Acid, Isophthalic acid.
12.  $\text{BrCH}_2\text{CH}_2\text{CH}_2\text{Br} ; \text{CH}_2=\text{CHBr}_2$

③

13. Mesostearic acid; L-tartaric acid.

14. D-glyceraldehyde, L-glyceraldehyde.



⑨

- (1) Identical.
- (2) Diastereomers.
- (3) Enantiomers.
- (4) Positional (structural isomers)
- (5) Enantiomers.
- (6) Diastereomers.
- (7) Identical.
- (8) Enantiomer.
- (9) Diastereomers.
- (10) conformational isomers.
- (11) Positional (structural isomers)  

The diagram shows three chemical structures. On the left is Phthalic Acid, represented by a six-membered ring with two CO<sub>2</sub>H groups at the 1 and 2 positions. In the center is Isophthalic Acid, shown as a six-membered ring with a CO<sub>2</sub>H group at the 1 position and a CO<sub>2</sub>H group at the 3 position. On the right is Terephthalic Acid, depicted as a six-membered ring with two CO<sub>2</sub>H groups at the 1 and 4 positions.
- (12) Positional isomer.
- (13) Diastereomers.
- (14) Enantiomer.
- (15) Conformational isomer.
- (16) Positional (structural) isomer.
- (17) Functional isomer.
- (18) Enantiomer.
- (19) Enantiomer.
- (20) Diastereomer.
- (21) Identical.
- (22) Diastereomer (geometrical isomer)
- (23) Metamer (structural)
- (24) Diastereomer.
- (25) Positional (structural isomer)



RACE # 00

ORGANIC

M.M. : 00

T

S.No.	Compound	POS	COS	Chiral	S.No.	Compound	POS
1.					12.		
2.					13.		
3.					14.		
4.					15.		
5.					16.		
6.					17.		
7.					18.		
8.					19.		
9.					20.		
10.					21.		
11.					22.		
12.					23.		

ORGANIC /R # 01

S.No. Compound

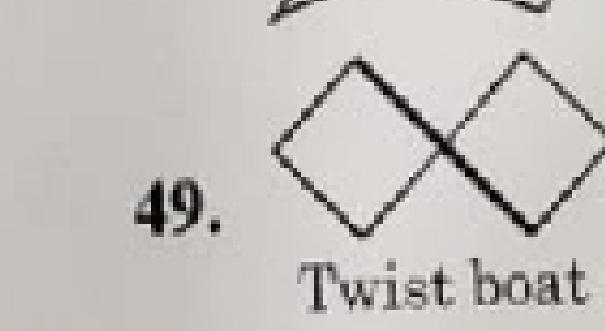
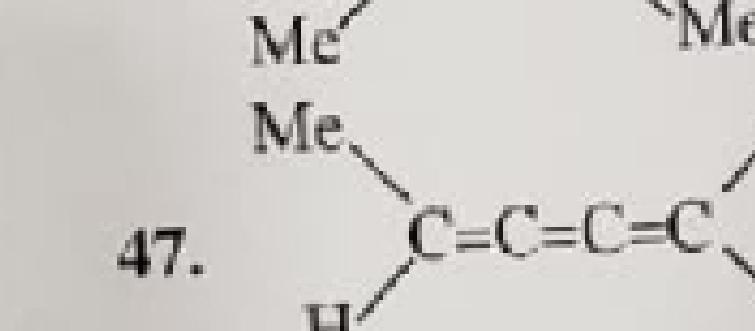
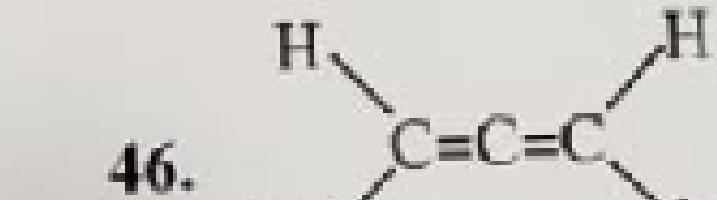
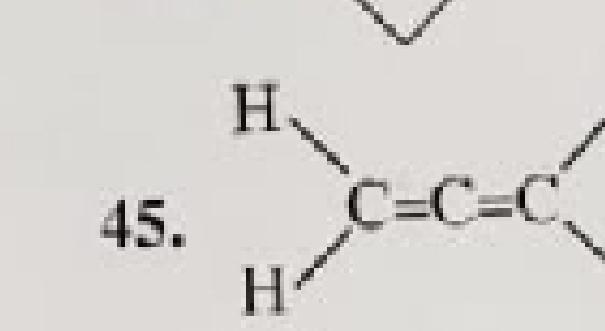
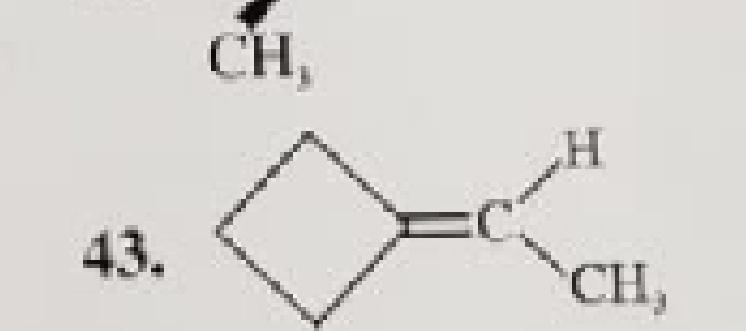
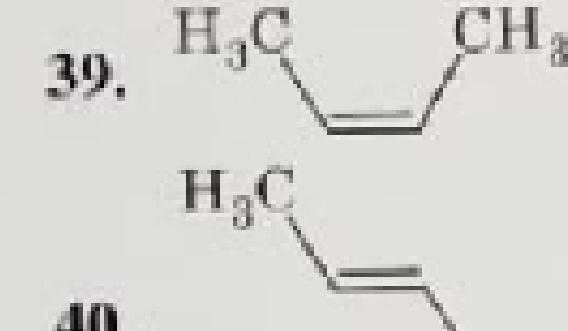
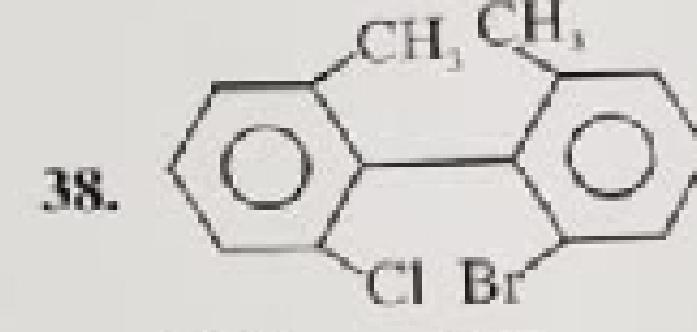
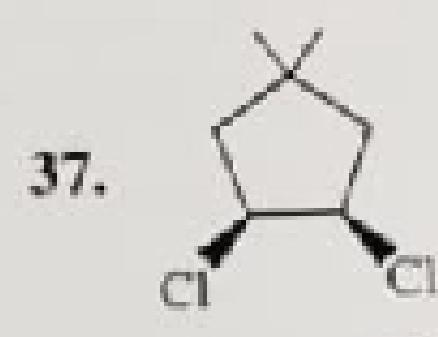
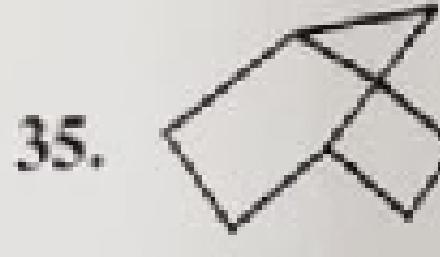
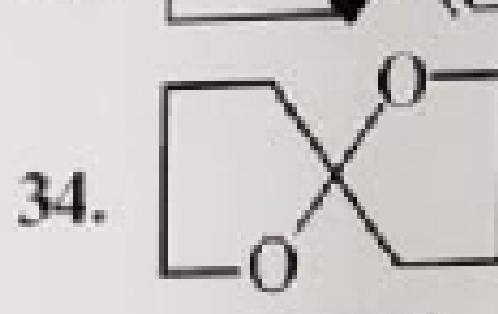
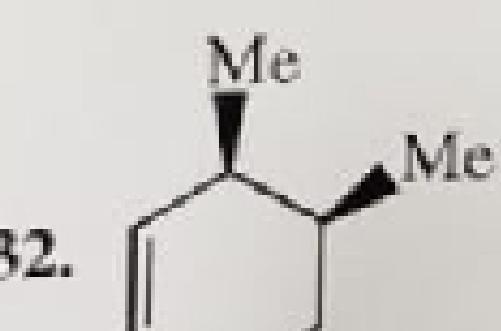
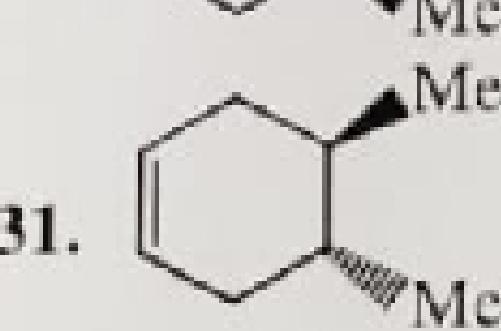
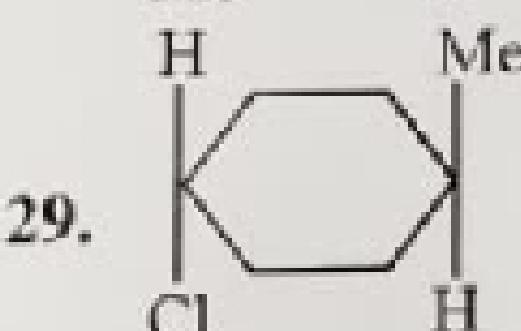
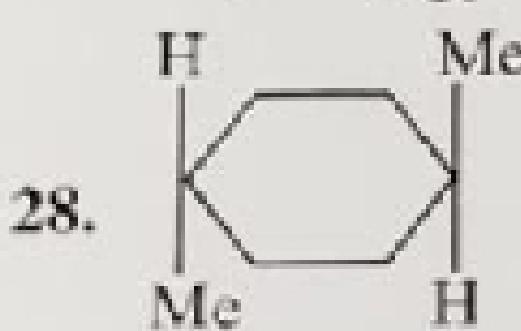
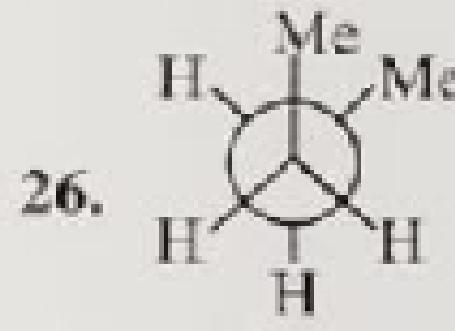
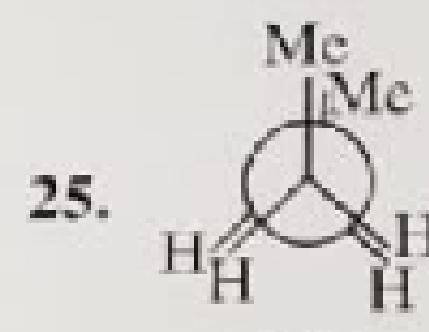
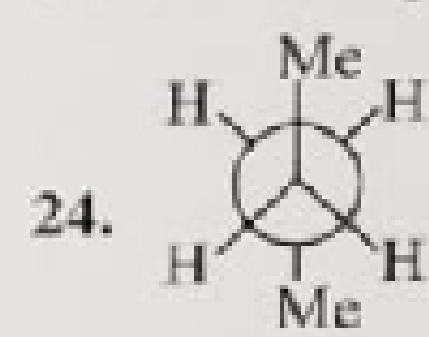
POS COS

Chiral

S.No. Compound

POS COS

Chir



Twist boat



Cubane

(10)

n.	pos	cos	chiral
1.	✓	✗	✗
2.	✓	✗	✗
3.	✓	✗	✗
4.	✓	✗	✗
5.	✗	✗	✓ [single chiral centre].
6.	✓	✗	✗
7.	✓	✗	✓ [optically active].
8.	✗	✗	✓ [enantiomer exists].
9.	✓	✗	✗
10.	✓	✗	✗
11.	✓	✗	✗
12.	✗	✗	✓ [enantiomer exists].
13.	✓	✓	✗
14.	✓	✗	✗
15.	✓	✗	✗
16.	✓	✗	✗
17.	✓	✗	✗
18.	✓	✗	✗
19.	✓	✗	✗
20.	✓	✗	✓ [single chiral centre].
21.	✗	✗	✓ [single chiral centre].
22.	✓	✗	✗
23.	✓	✗	✗
24.	✓	✓	✗ [in anti form it has cos in eclipsed form it has pos].
25.	✓	✓	✗ [same as above].

26. ✓ ✓ ✗ [ganchefem is chiral but compound  
           is achiral due to POS in fully eclipsed  
           form & COS in anti-form].
27. ✗ ✗ ✗ ✓
28. ✓ ✓ ✗ [Trans isomer, POS & COS both present]
29. ✓ ✗ ✗ ✗
30. ✓ ✗ ✗ ✗
31. ✗ ✗ ✗ ✓ [Trans isomer ; no POS, no COS].
32. ✗ ✗ ✗ ✓
33. ✗ ✗ ✗ ✓ [Trans cyclooctene].
34. ✗ ✗ ✗ ✓ [no POS, no COS, both mjs are ⊥ to each  
           other].
35. ✓ ✗ ✗ ✗
36. ✓ ✗ ✗ ✗
37. ✓ ✗ ✗ ✗
38. ✗ ✗ ✗ ✓ [Two mjs are ⊥ to each other ; no POS].
39. ✓ ✗ ✗ ✗
40. ✓ ✓ ✗ ✗
41. ✗ ✗ ✗ ✓
42. ✗ ✗ ✗ ✓ [single chiral centre, no POS, no COS]
43. ✗ ✗ ✗ ✓ [single chiral centre no POS, no COS]
44. ✗ ✗ ✗ ✓ [giant like allene system].
45. ✓ ✗ ✗ ✗
46. ✗ ✗ ✗ ✓
47. ✓ ✓ ✗ ✗ [both present, all terminal  
           groups are in same plane].
48. ✓ ✓ ✗ ✗
49. ✗ ✗ ✗ ✓ [Twist form is optically active]  
                   but epd is optically inactive.
50. ✓ ✓ ✗ ✗