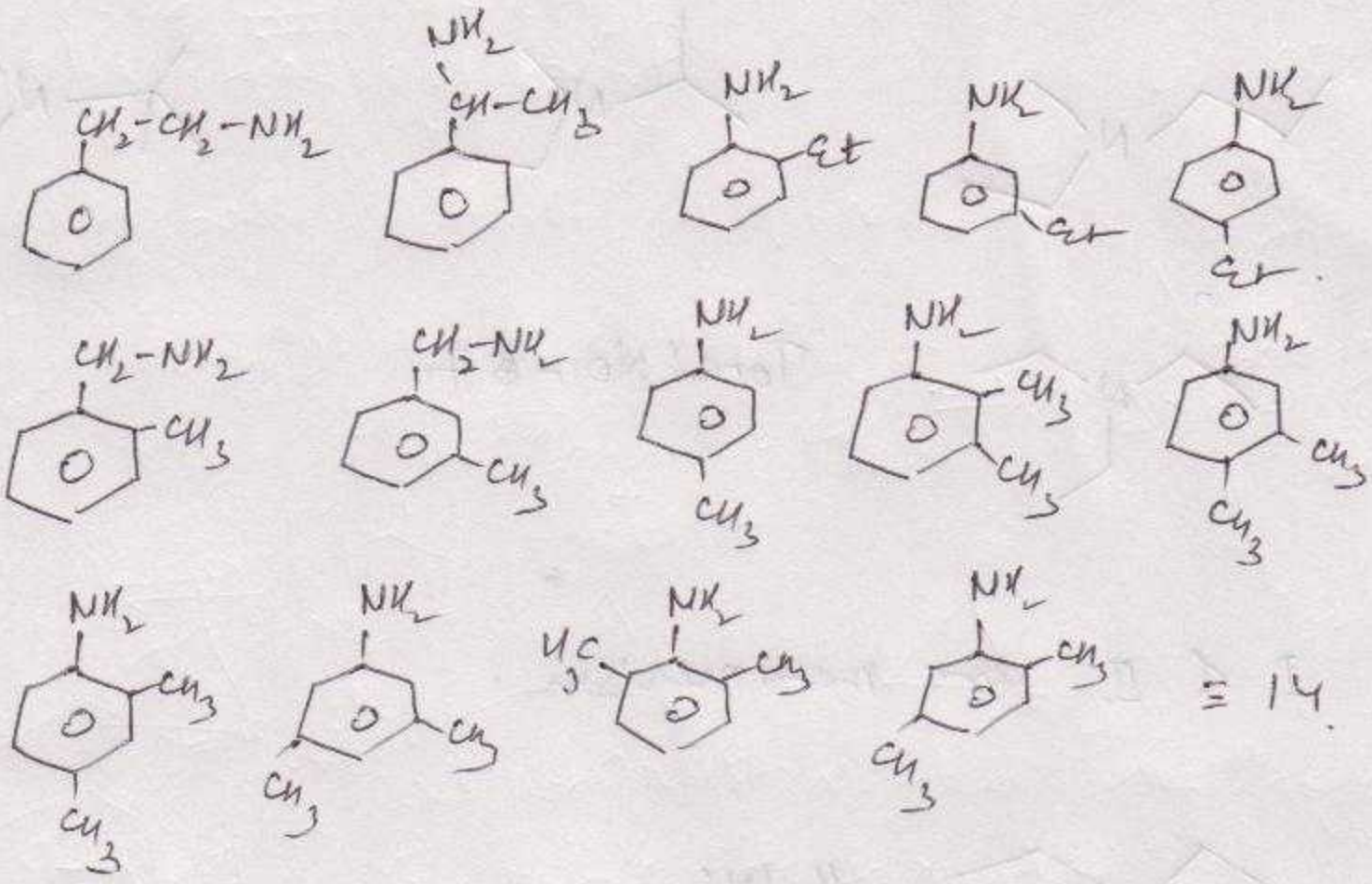
ISOMERS

HOME ASSIGNMENT-1

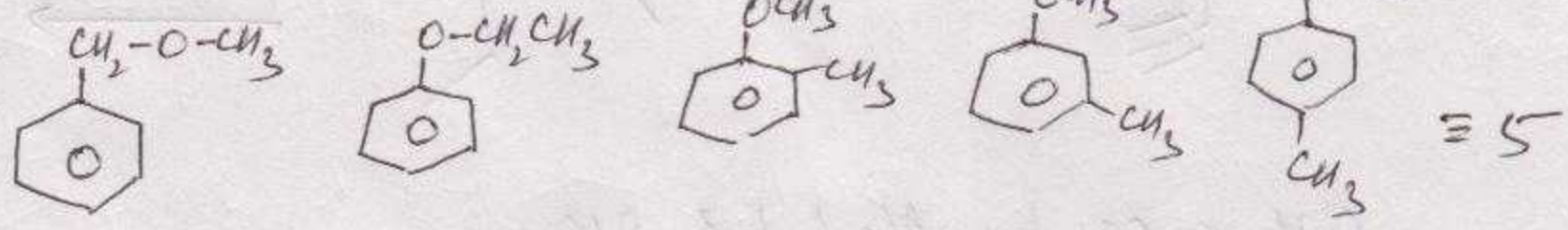
1. (B) Alkane, (C_nH_{2n+2}) can exibit only position and chain isomers.

2. (D)



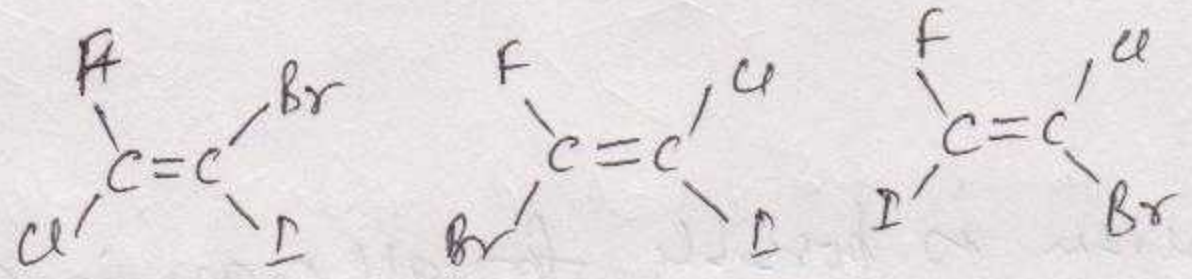
≡ 14.

3. (D)



≡ 5

4 (D)

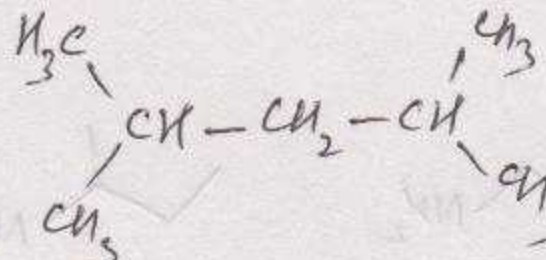


≡ 3.

5. (D) Total No. of monochloroderivatives are possible for

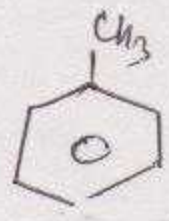
$CH_3-CH_2-CH_2-CH_2-CH_3$ — 3

n-pentane



— 3

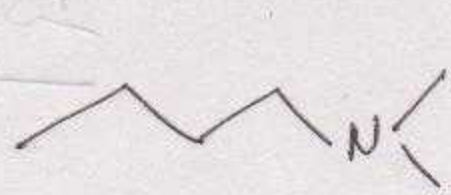
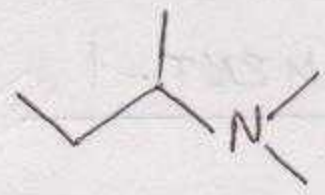
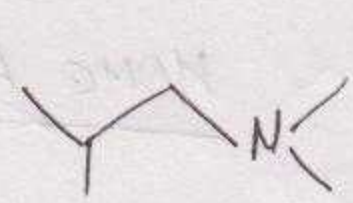
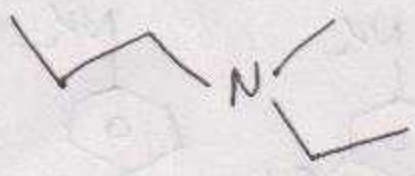
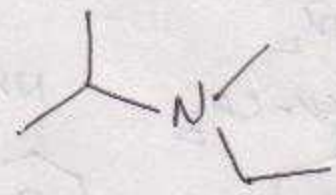
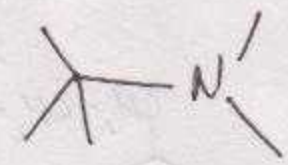
2,4 dimethylpentane



Toluene — 4

$CH_3-CH(CH_3)-CH(CH_3)-CH_3$ — 2.

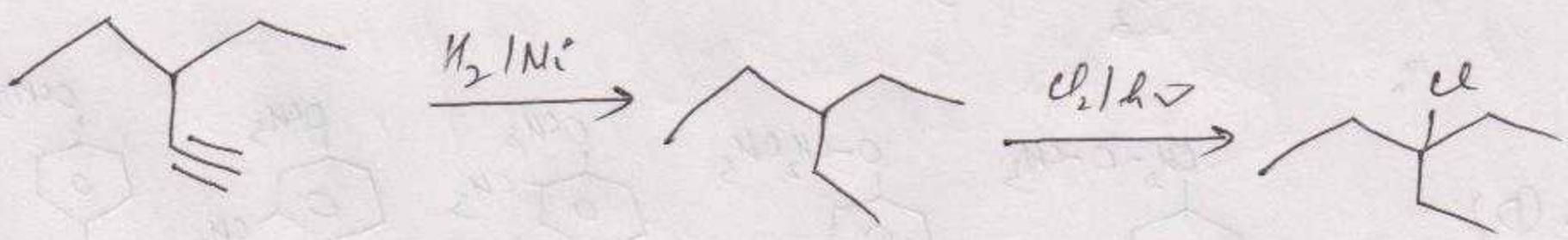
6. (D)


Total No - 07

7. (B) I & II are metamerism.

8. (A)



9 (D) $C_6H_{14}O$ can be Alcohol & Ether

10. (D)

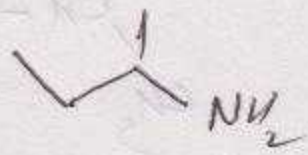
11 (D) Chain isomerism is possible for all organic compound having no. of carbon atom more than '4'

12. (A)

13. (C) $CH_3-CH=CH-CH_2-CH_3$ Consist 14 sigma and 1 π bond.
(2-Pentene)

14. (D)






Total No - 4

15. (A) Both Propanal & Propanone having same molecular formula as C_3H_6O.

16. (B)

total No. - 3

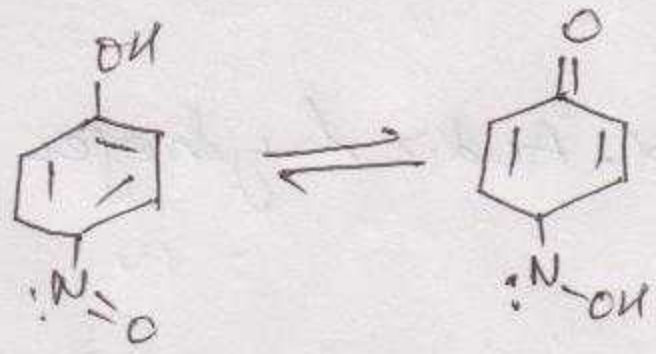
17. (A)

18. (C) only (3) statement is wrong.

19. (B) & (C) consist both α-Acidic hydrogen.

20. (D) $RCH_2-\overset{+}{N}(=O)-O^-$ consist α-Acidic hydrogen.

21. (A)



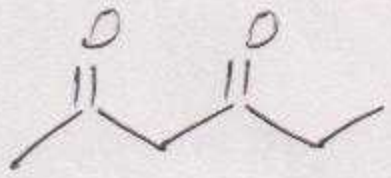
22. (A, C, D)

can't exibit tautomerism.

23. (A)

24. (A, C, D) don't consist α-Acidic hydrogen.

25. (B)



2,4 Hexanedione having more stable conjugate base.

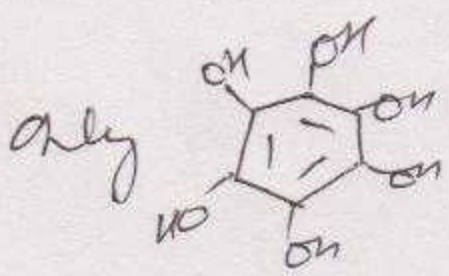
26. (A, B) I & II are tautomers.

I, III & IV are functional isomers.

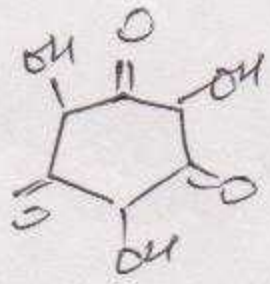
27. (C)

28. (C)

only

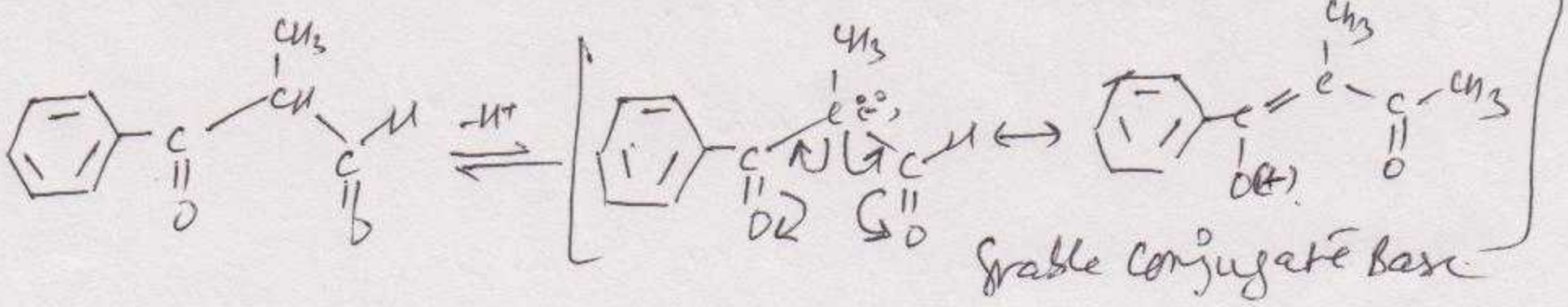


&



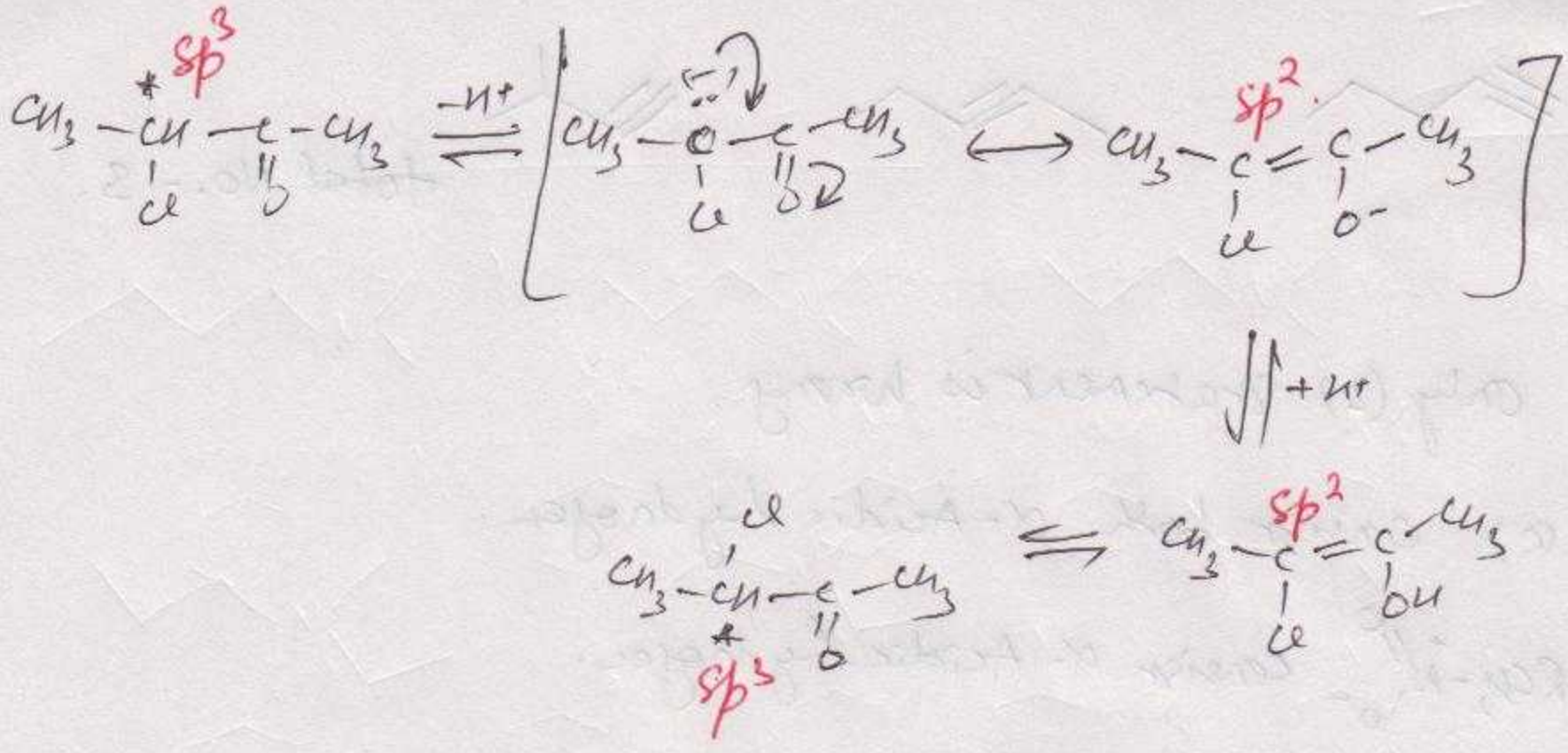
having same molecular formula.

29. (B)

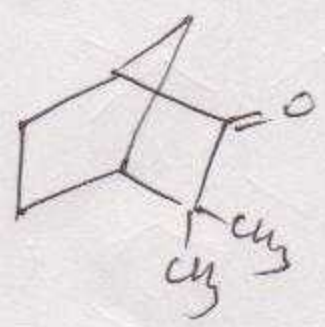


Stable Conjugate Base

30 (B)

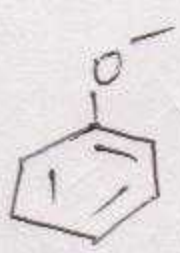


31. (B)



does not consist α-Acidic hydrogen.

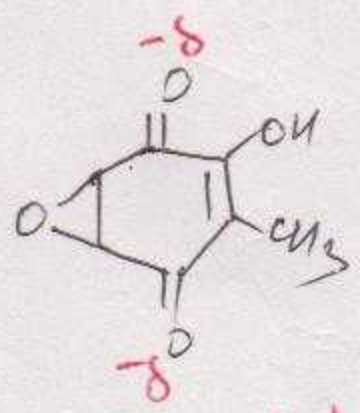
32. (D)



and

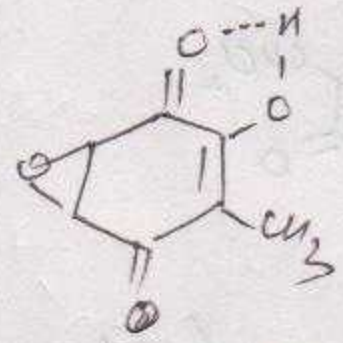
are pair of resonating structure.

33. (D)



Less Repulsion

and

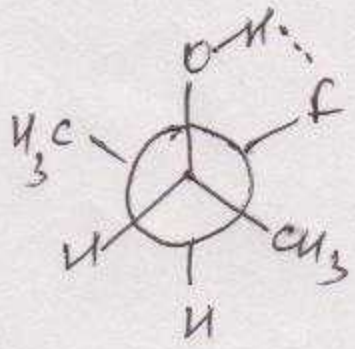


H-Bonding & resonance Stabilisation

HOME ASSIGNMENT-2

PART-A

1. (C)



(Gauche)

Stabilised through H-Bonding.

2. (D)

3. (B) Both (I) & (II) belongs to same Homologous series.

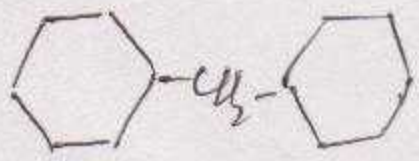
4. (A) I & II are Conformational isomers, as they can be Convert into each without breaking any bonds.

5. (A) I & II are positional isomers

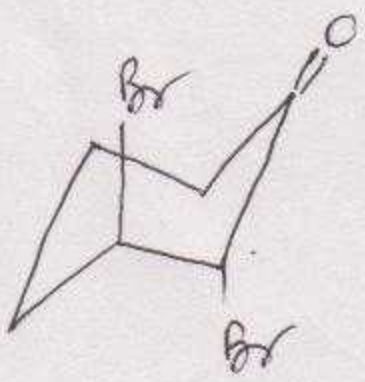
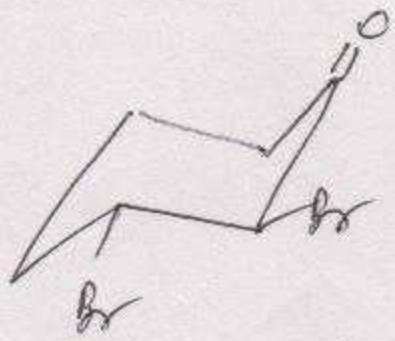
6. (D) It consist three membered cyclic ring.

7. (B) It consist minimum torsional Strain.

8. (C)

9. (C)  having same molecular formula as given compound

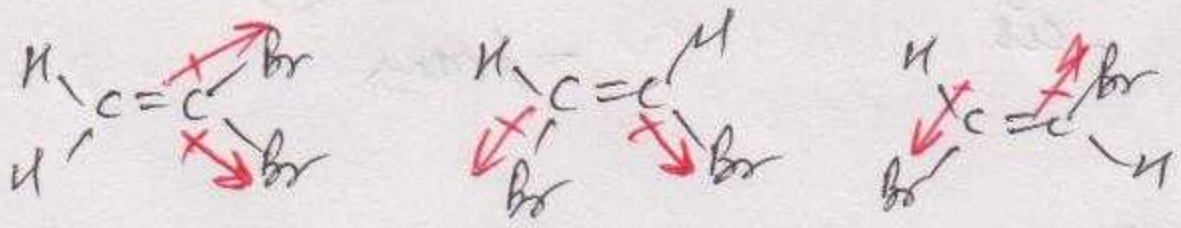
PART-B

7.  and  are conformational isomers. and they can't be Separated by distillation or Recrystallisation

8. Bulkier group should not be present on axial position as it is unstable due 1,3 diaxial interaction.

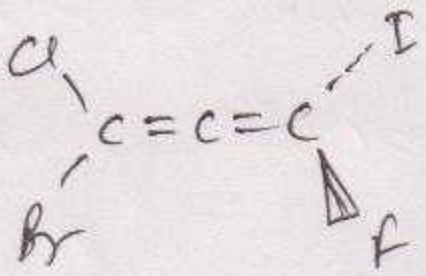
8. (B) Given Compound consist two stereocenter and thus total number of diastereomers $= 2^2 = 4$.

9. (C) Order of dipole moment (C) > (A) > (B)



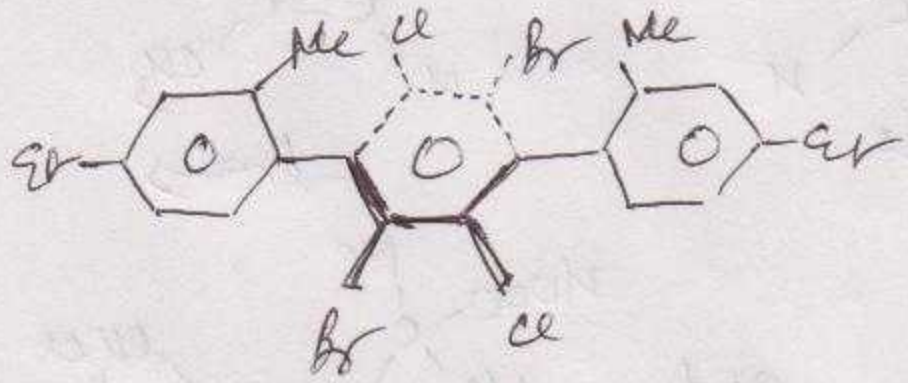
(C) (A) (B)

10. (A)

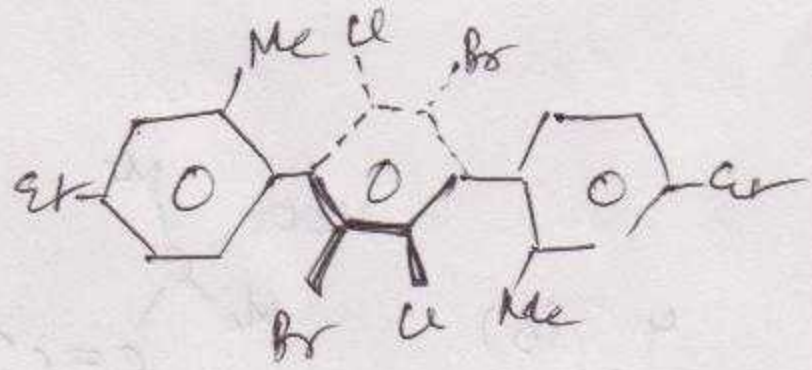


is non-planar, thus can't exibit geometrical Isomerism.

11. (D)



and

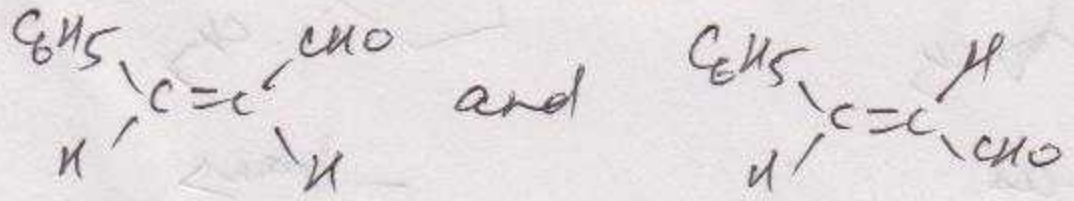


- cis - trans

12. (B) they are geometrical isomers.

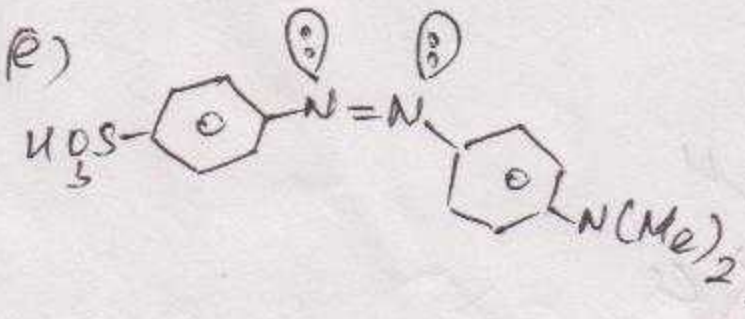
PART-B

1. (b)

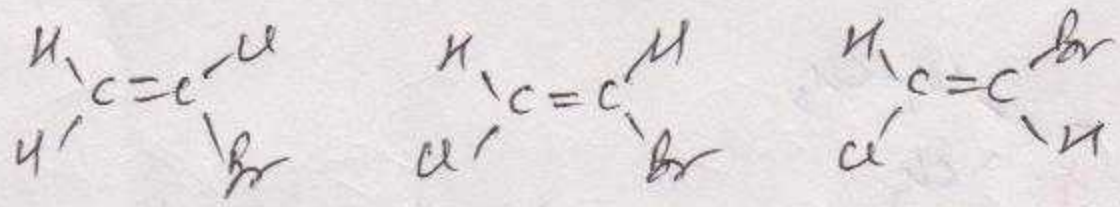


and

(C) and (E)

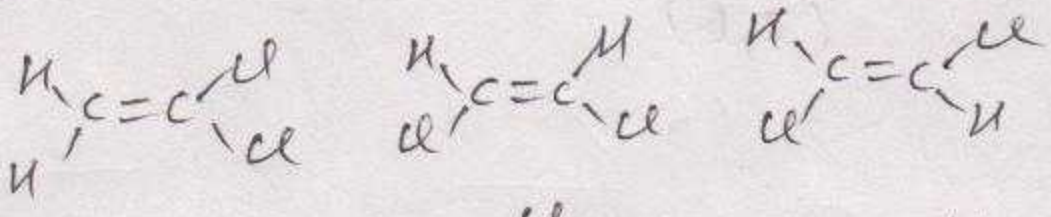


2. (i) C_2H_2ClBr



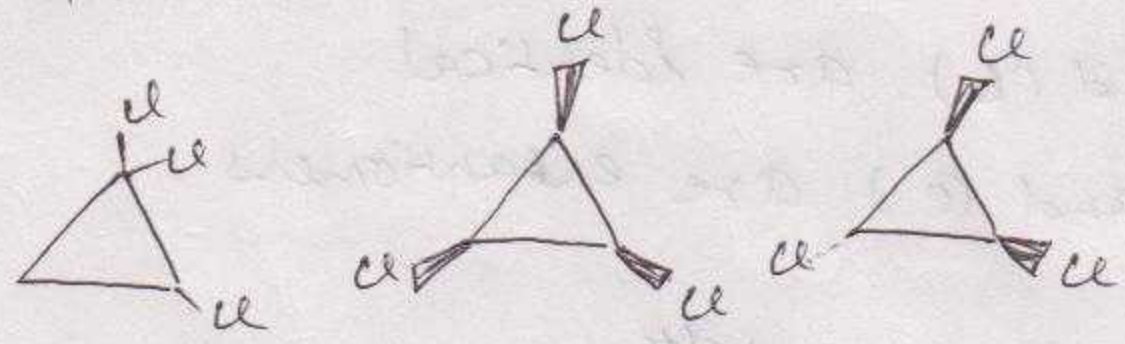
Total No - 3

(ii) $C_2H_2Cl_2$



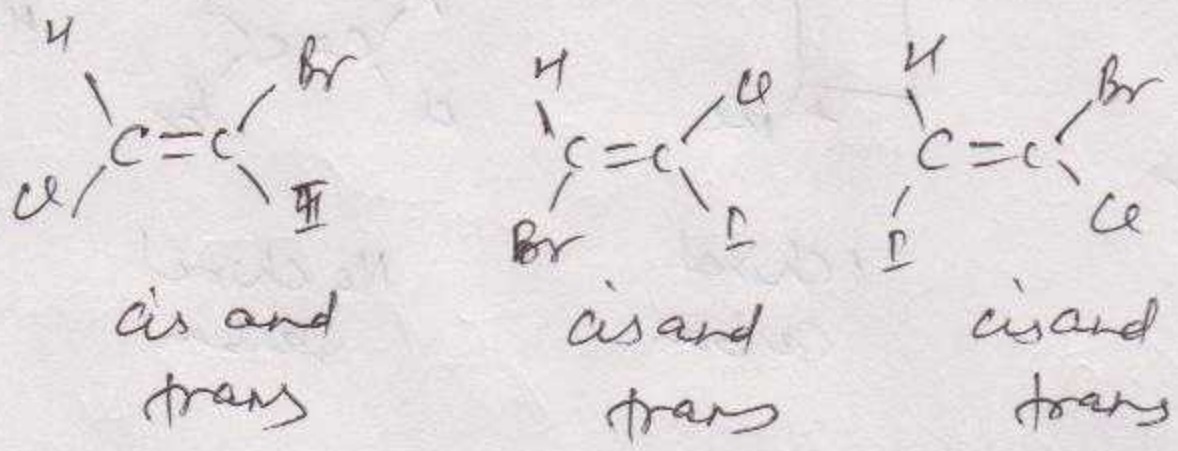
Total no - 3

(iii)



Total No - 3

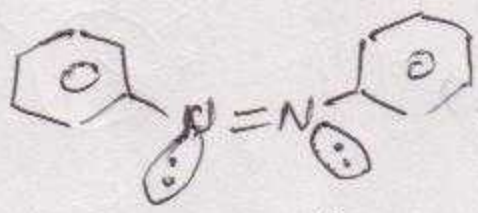
(iv)



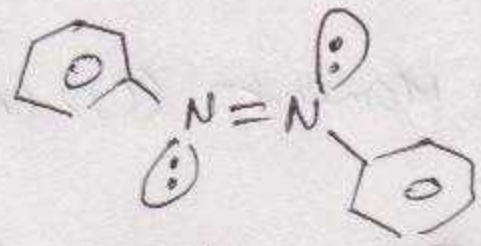
HOME ASSIGNMENT-3

PART-A

1. (B)

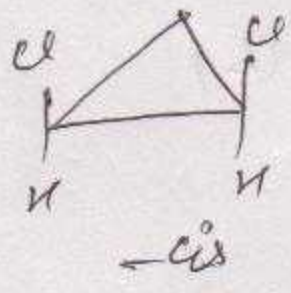


-cis

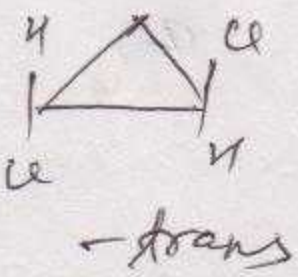


-trans

2. (D)

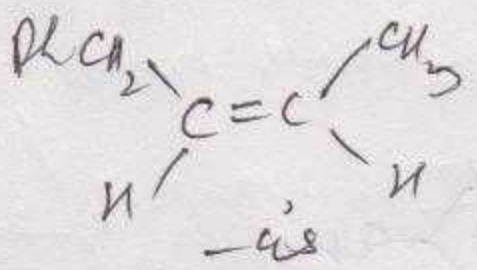


-cis

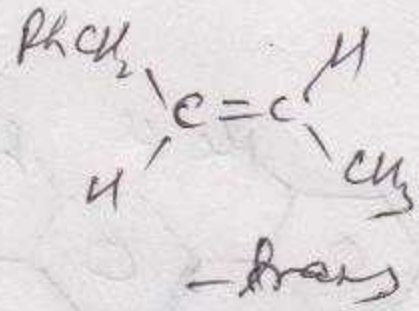


-trans

3. (B) 1-Phenyl-2-butene

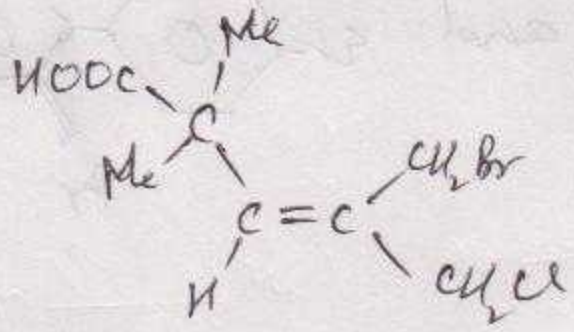


-cis



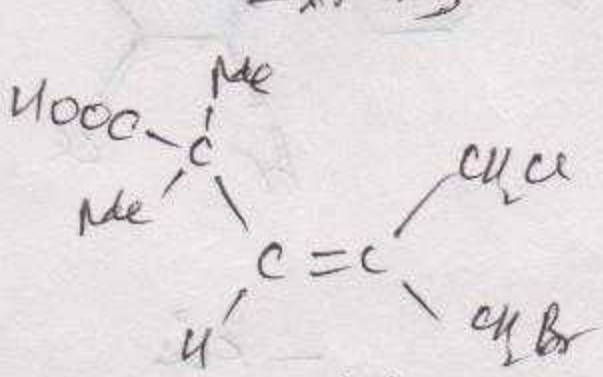
-trans

4. (B)



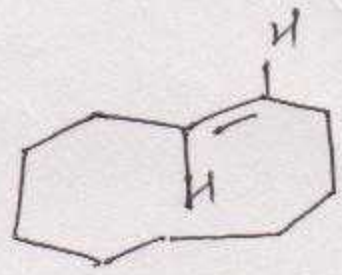
(Z)

and

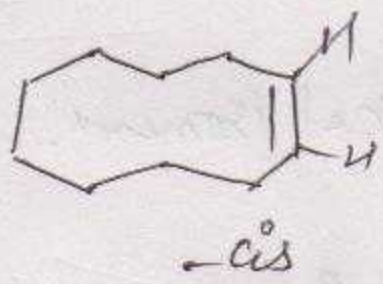


(E)

5. (D)

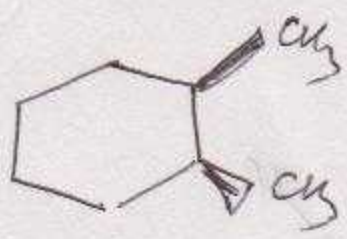


-trans



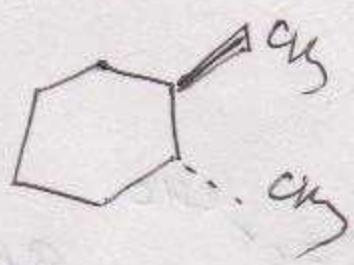
-cis

6. (A)



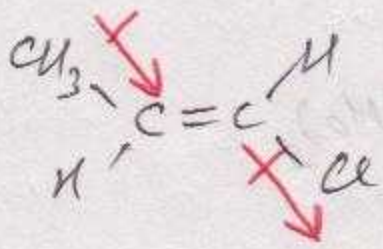
-cis

and



-trans

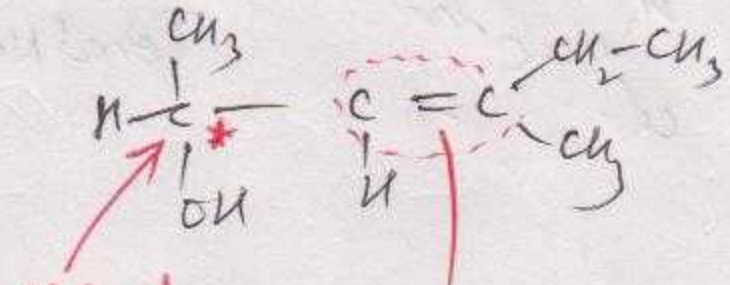
7. (B) Cahn-Ingold-Prelog



trans-1-chloroprop-1-ene

HOME ASSIGNMENT-4

1. (D)



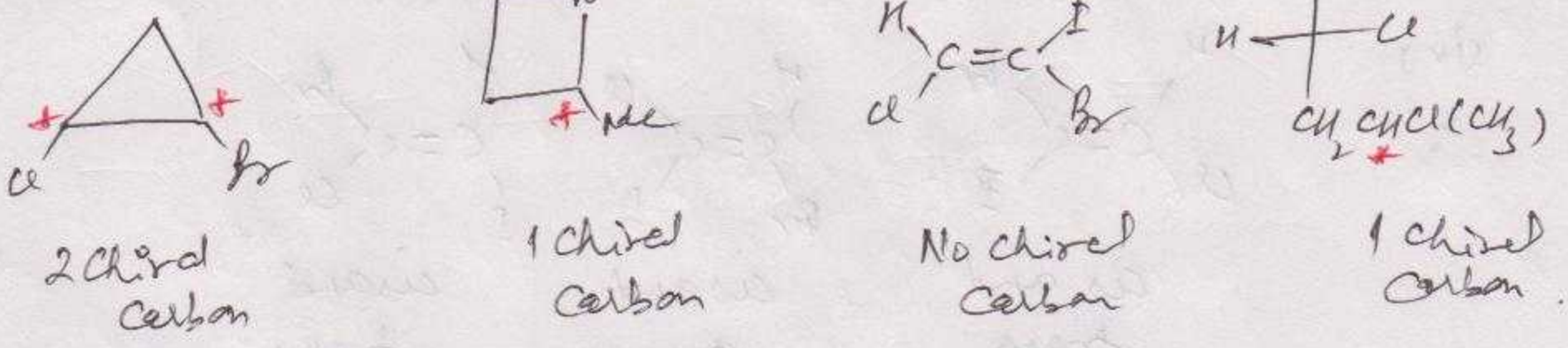
total no. of isomers
$= 2^2 = 4$

2. (C)

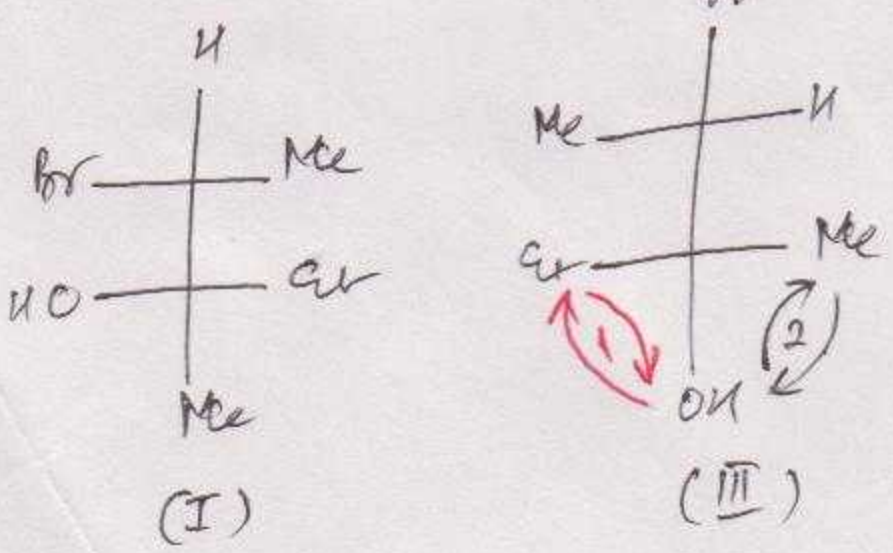
(A) and (B) are identical

(A) and (C) are enantiomers.

3. (C)

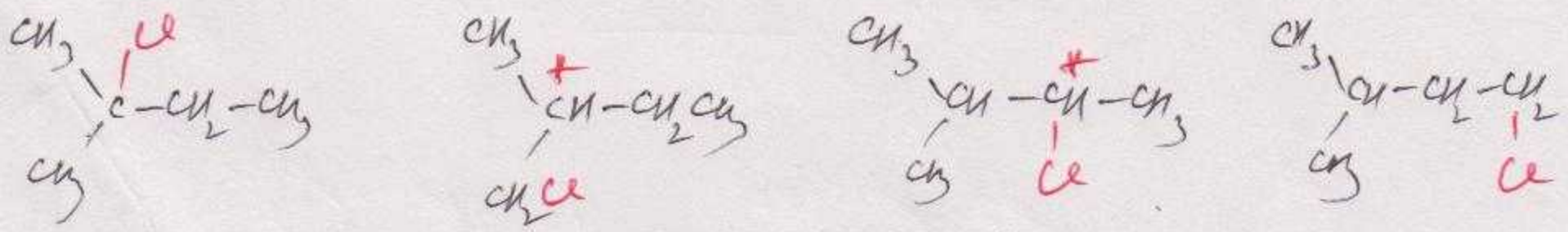


4. (C)



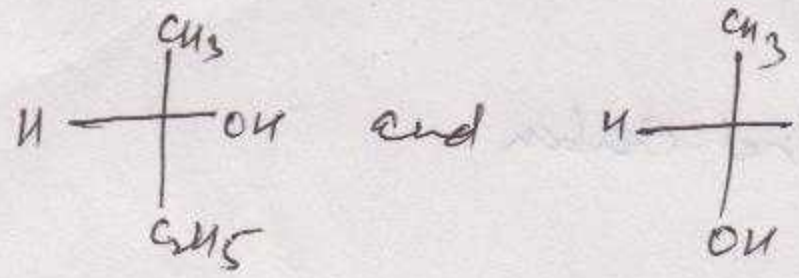
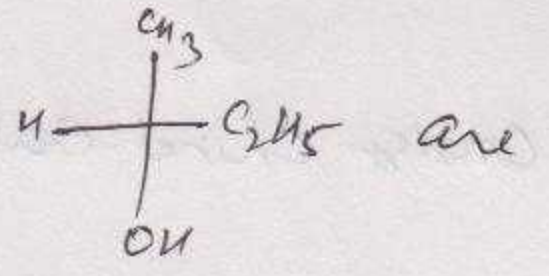
On exchange no. of exchange on same chiral carbon III & I will be identical.

5. (D)



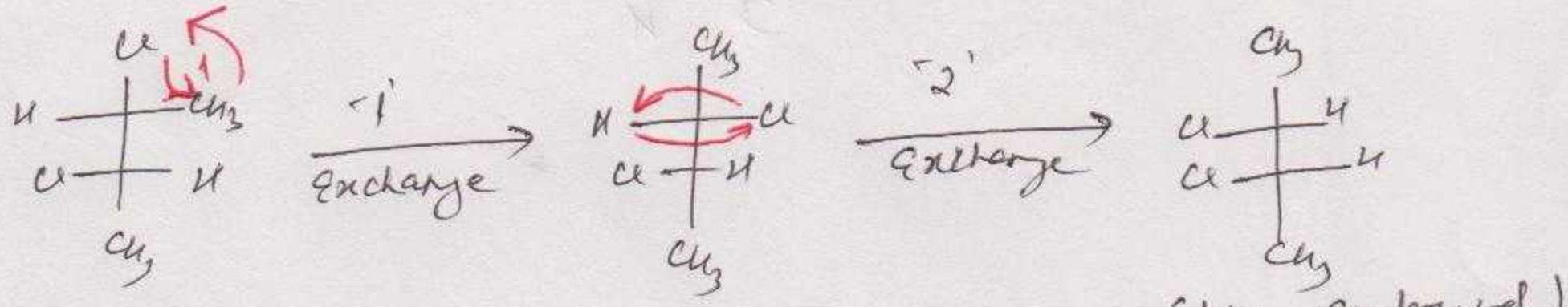
6. (D) I & III are same compound and they have same optical Activity.

7. (C) Given compounds are structural isomers.

8. (B)  and  are pair of enantiomers.

9. (C) I & III are non-superimposable mirror image and thus they are enantiomers.

I & II are structural isomers.

10. (B) 

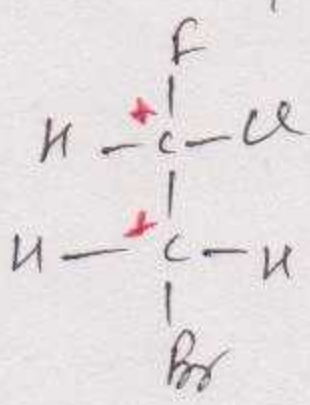
(Meso compound)

11. (B) Relative Configuration

12. (B) $CH_2=CH-\overset{*}{\underset{\underset{CH_3}{|}}{CH}}-CH_2-CH_3 \xrightarrow{KMnO_4} CH_3-CH_2-\underset{\underset{CH_3}{|}}{CH}-CH_2-CH_3$

Optically Active — Optically Inactive

13. (C) The resultant product is



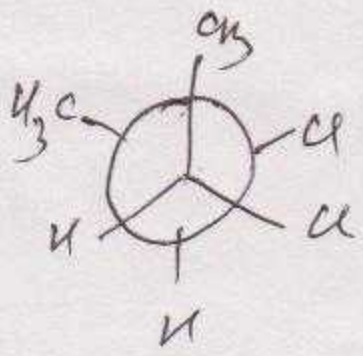
Consist two chiral carbon

Total No. of isomers

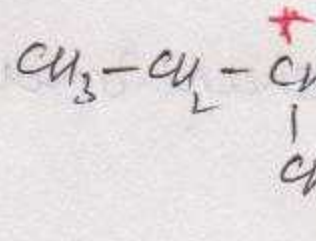
$= 2^2 = 4$

14. (C) 'a' is meso compound but 'b' is chiral.

15. (A) Given compound are not mirror image

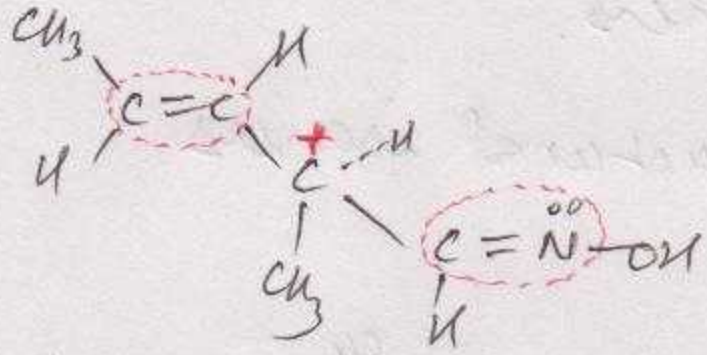
16. (A)  is meso compound.

17. (D)



Consist Chiral Carbon.

18. (D) Resultant Oxime is



3 Stereocenters'

Total No. of Isomer = 2^3

= 8.