

Isomerism

Compounds having same MF But diff. in - - - - -

(same MF
diff. SF)

molecular
formula

(same MF
some SF)

Structural Isomerism

or
Constitutional Isomerism

Chain ISO

Ring Chain ISO

Position ISO

Functional ISO

Metamerism
Tautomerism

Configurational
Isomerism

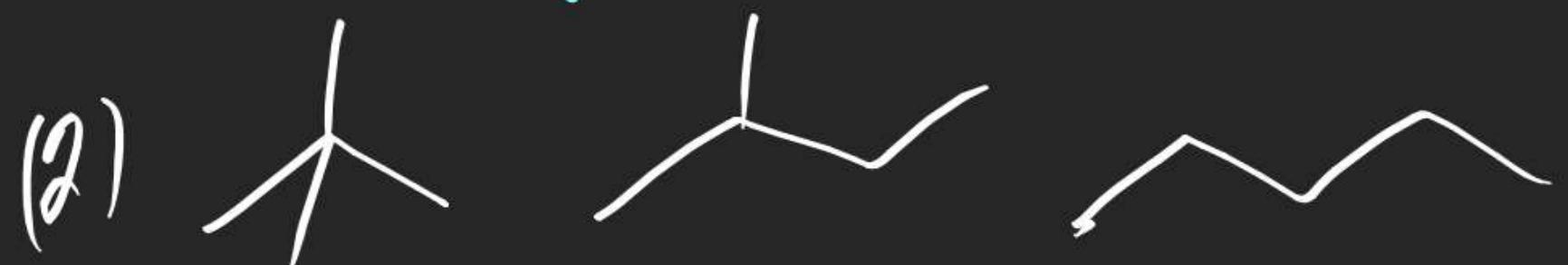
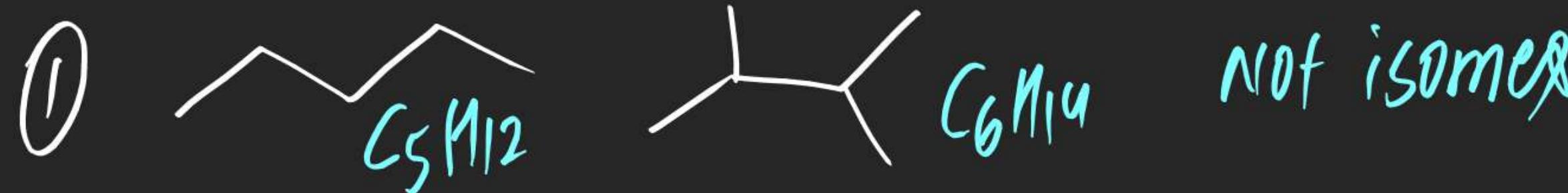
(conformational)
Isomerism

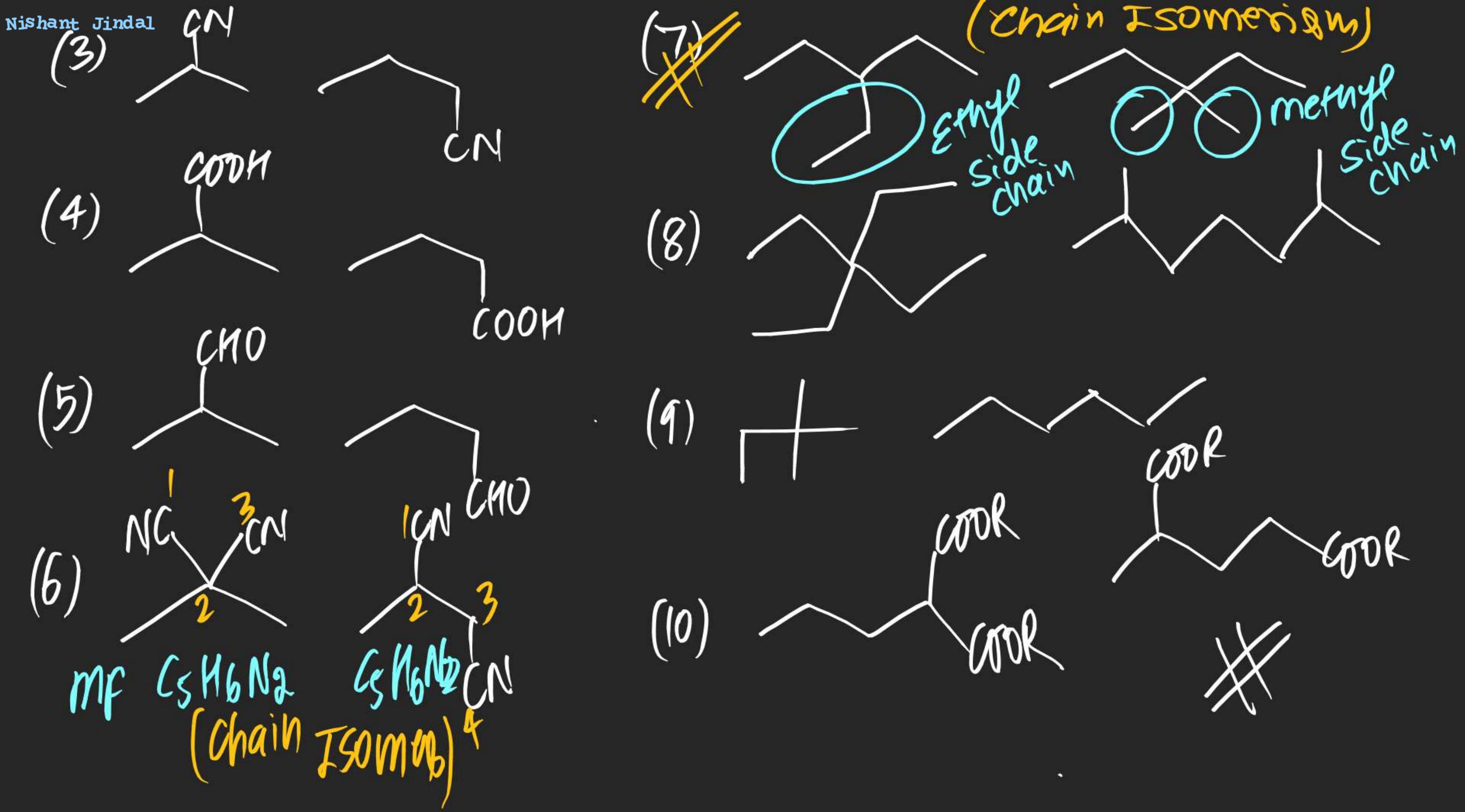
Geometrical ISO.
Optical ISO.

Structural Isomerism

Compounds having same molecular formula But difference in structural formula are known as Structural isomers / Constitutional isomers.

(1) Chain Isomerism: Compounds having same MF But difference in length of Principal carbon chain / Side chain





Structural Isomerism

Ring-chain Isomerism :-

formula But difference in
form.

Ayclic

Cyclic

Compounds having same molar



(Ring-chain Isomers)

(14) OH



(11)



(12)



(13)



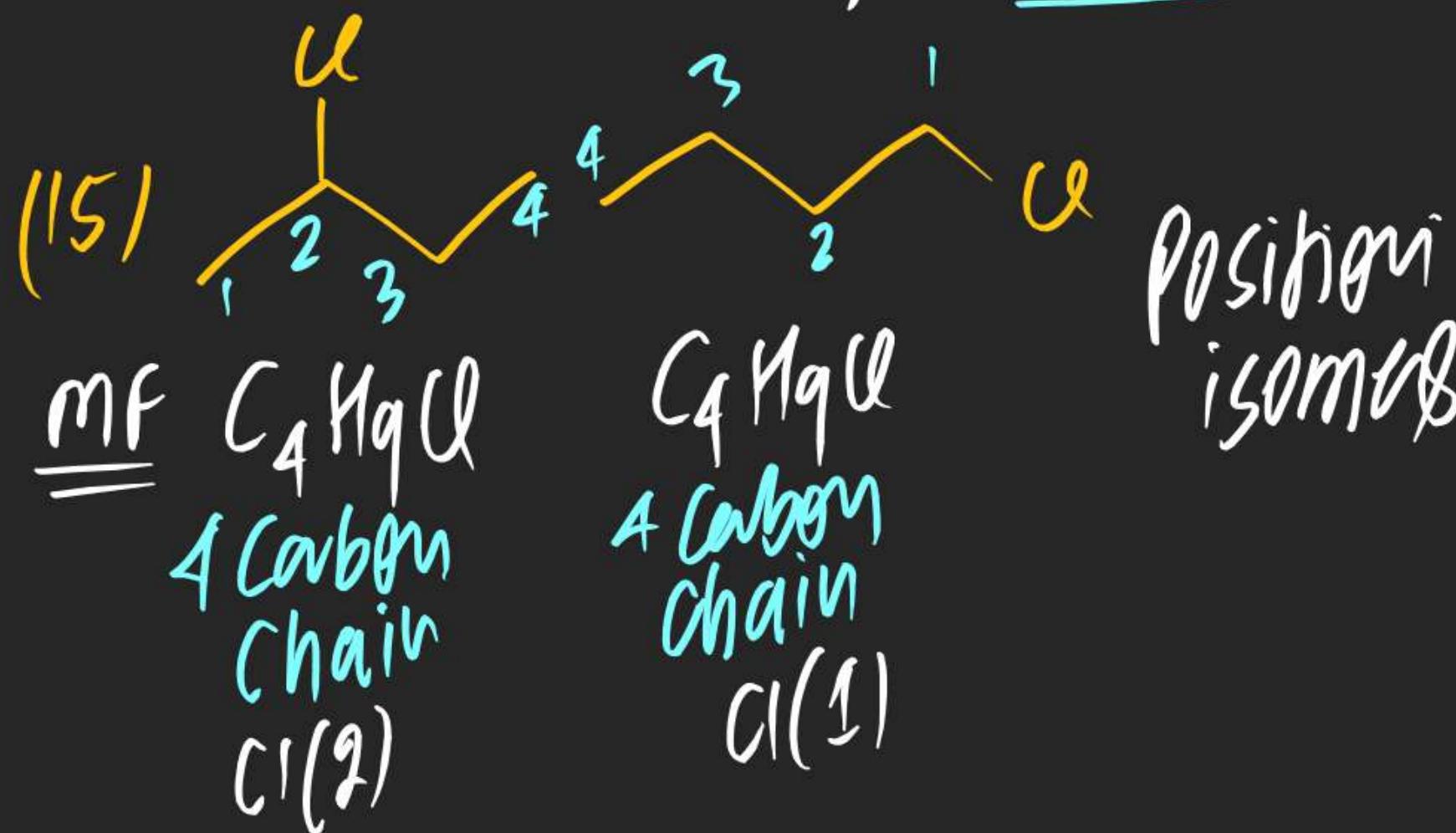
I II \Rightarrow Ring chain
II III \Rightarrow Ring chain
I III \Rightarrow Ring chain

Structural Isomerism

Position Isomerism:

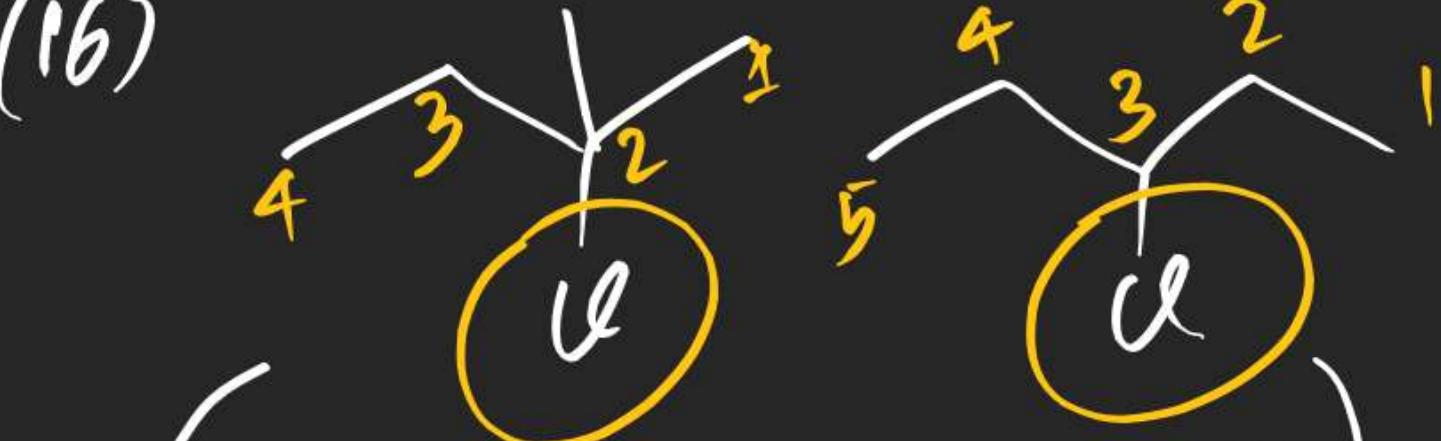
Compounds having same MF But
difference in position of substituents

/ functional Groups (For Position isomers
 - in carbon chain length must be same).



Structural Isomerism

(16)



C1(2)

C1(3)

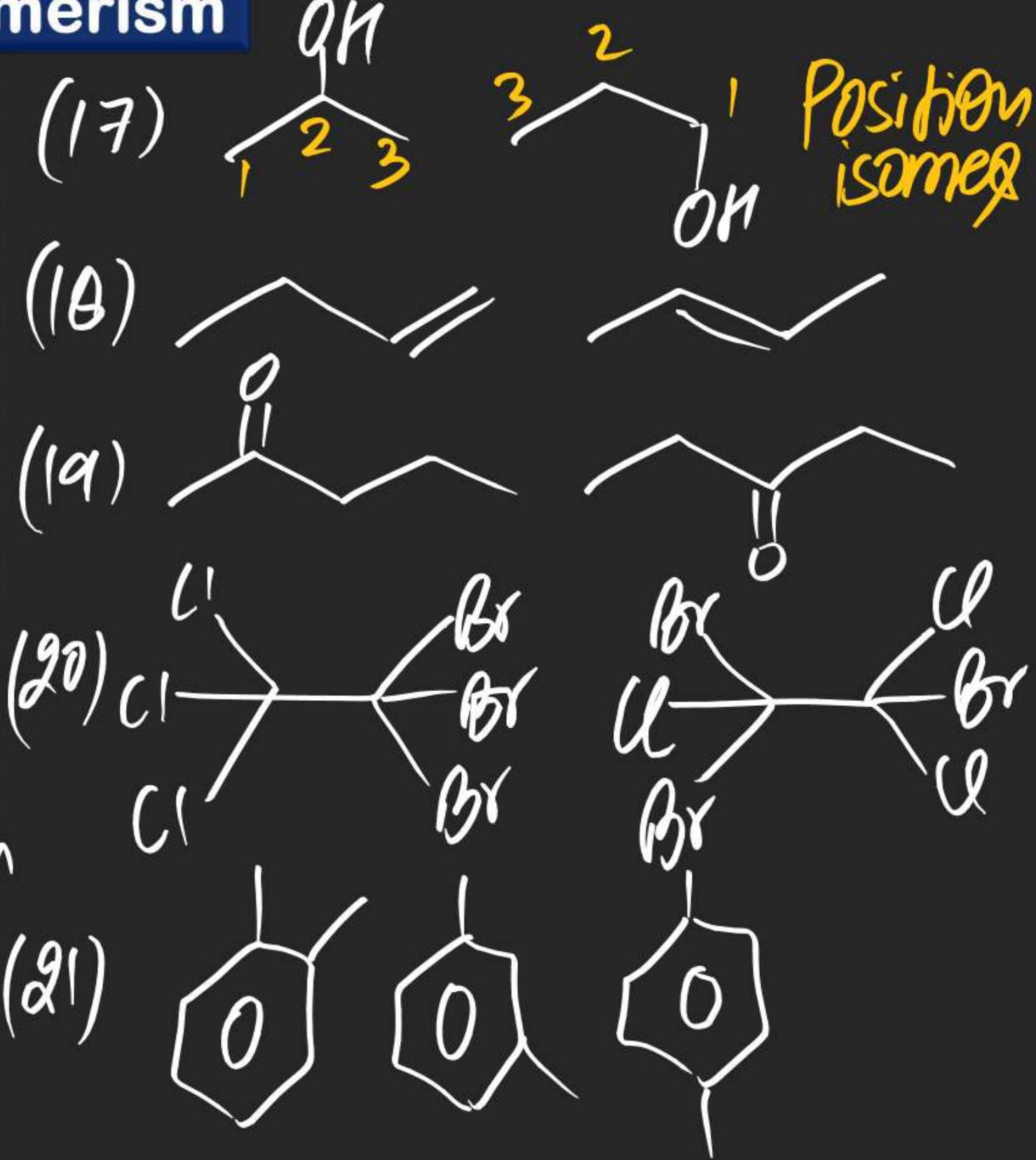
~~Position~~

mf

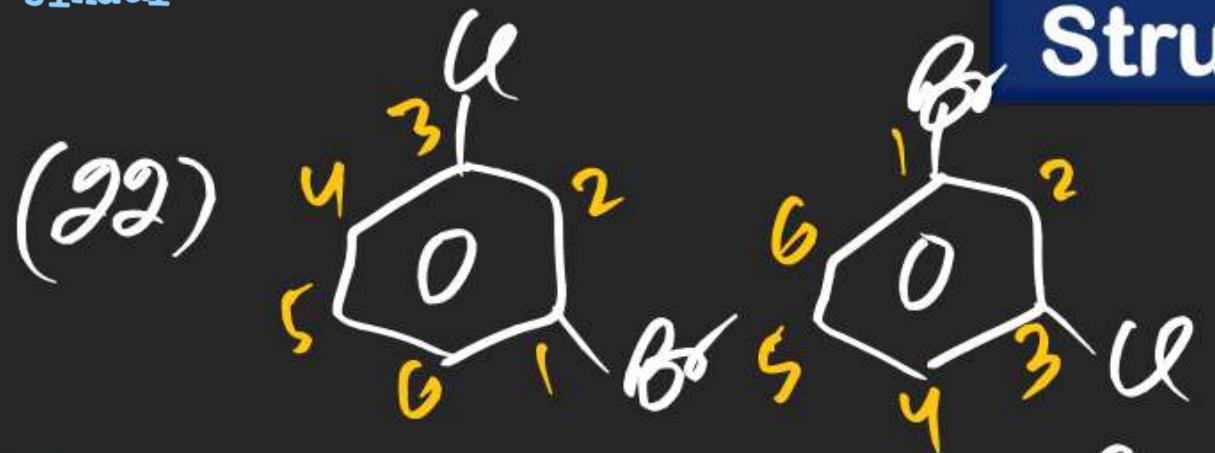
4 carbon chain

hexane
chain
isomersC₅H₁₁O5-carbon
chain

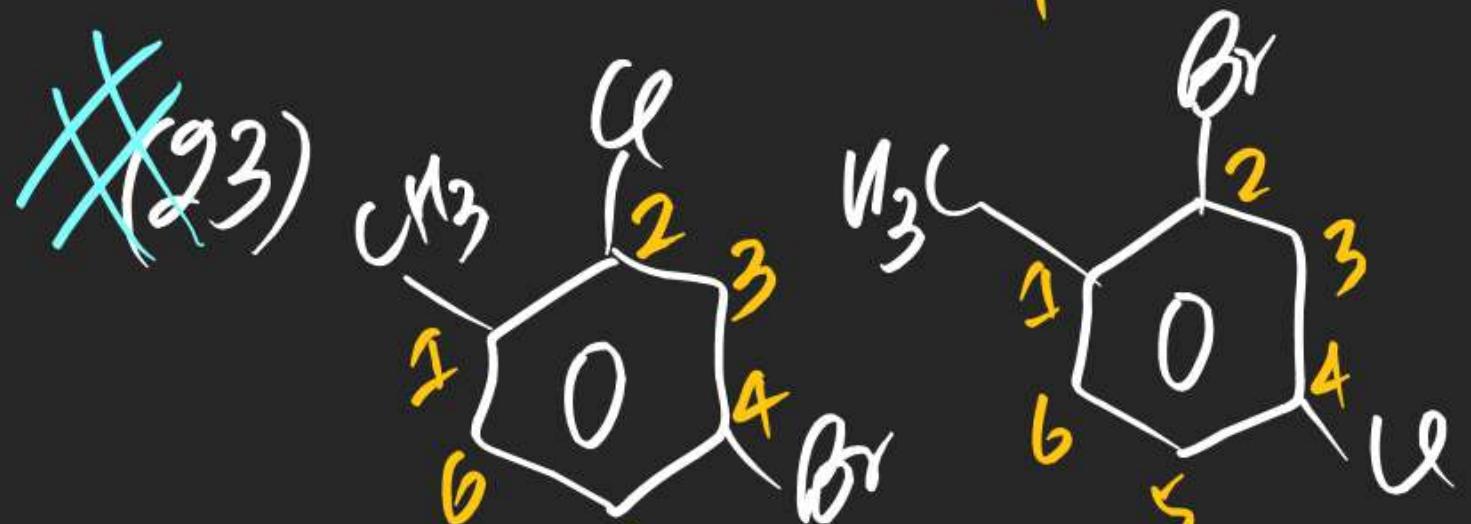
(21)



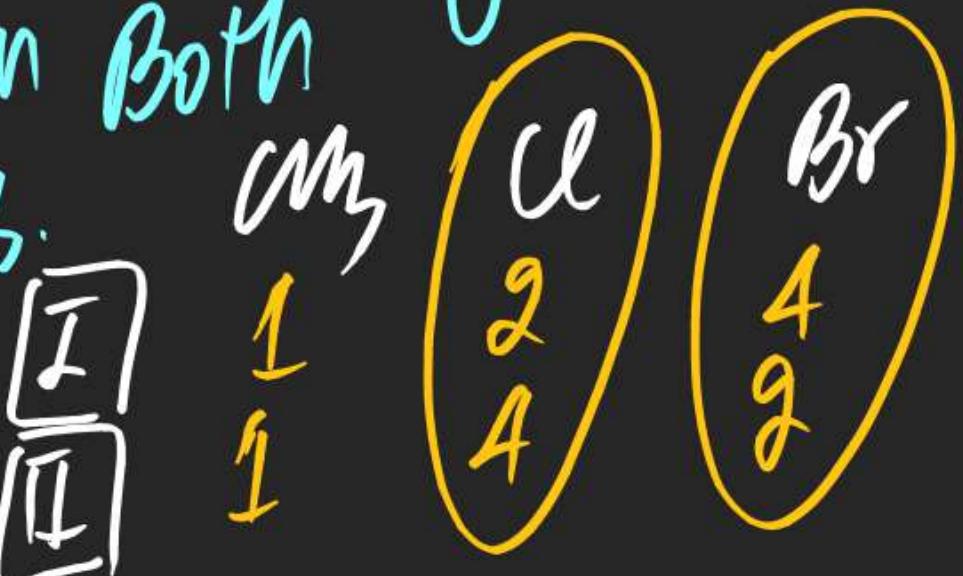
Structural Isomerism



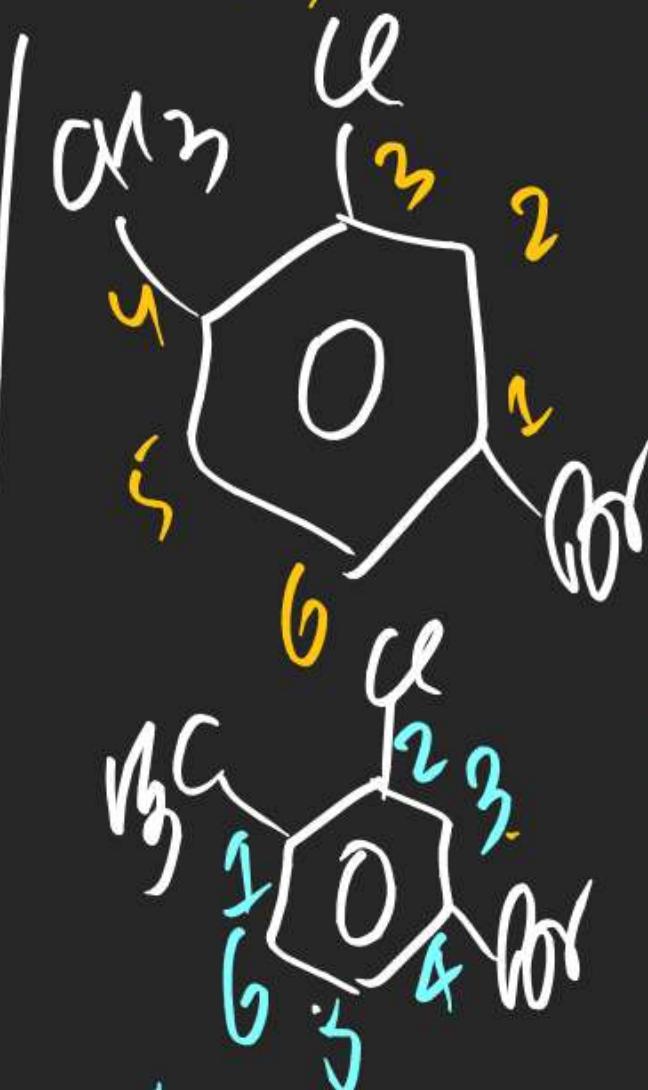
1-Bromo-3-chloro Benzene
(Identical)



→ Cl & Br Both are having
diff position in Both
Compounds.



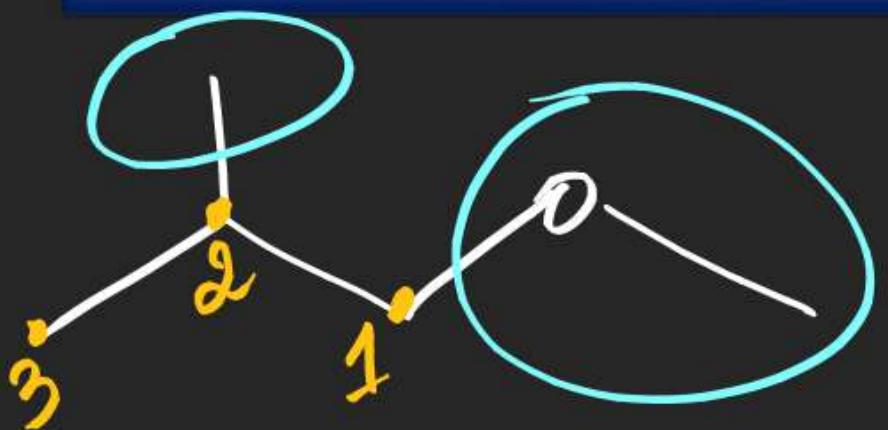
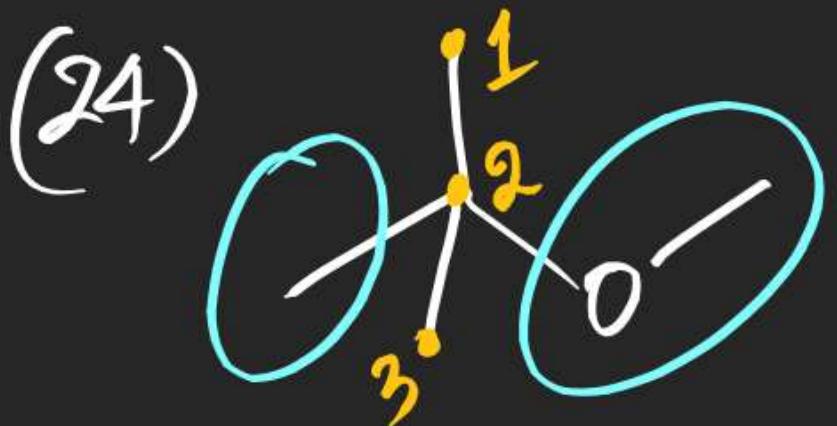
(Position isomers)



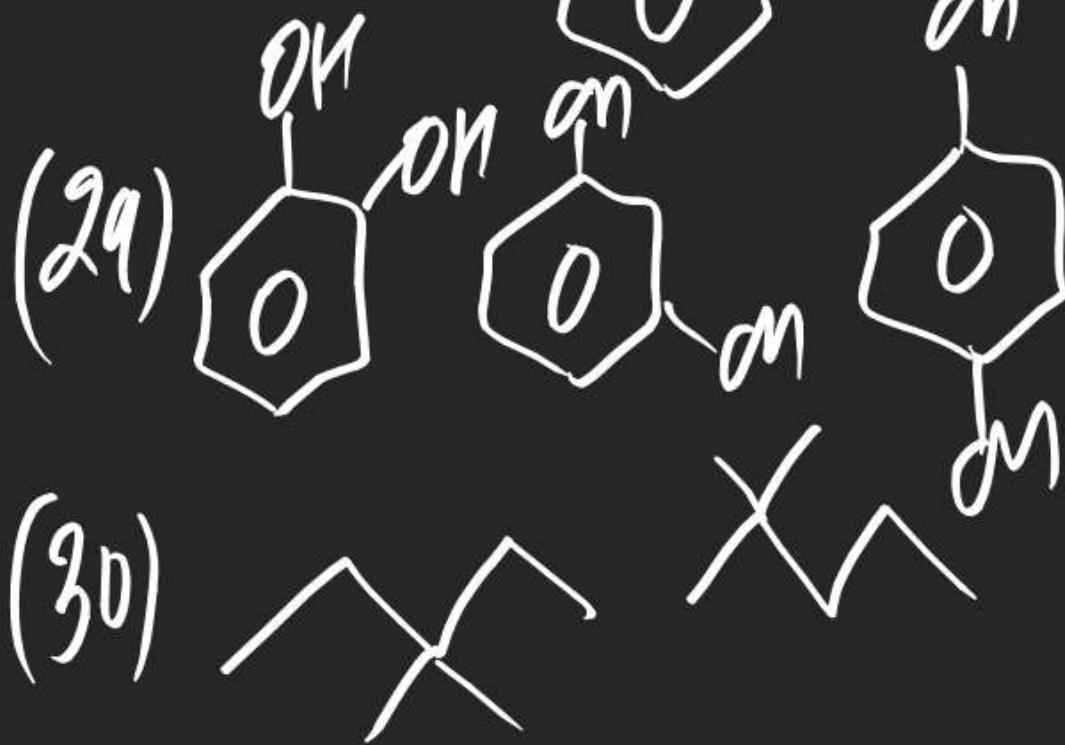
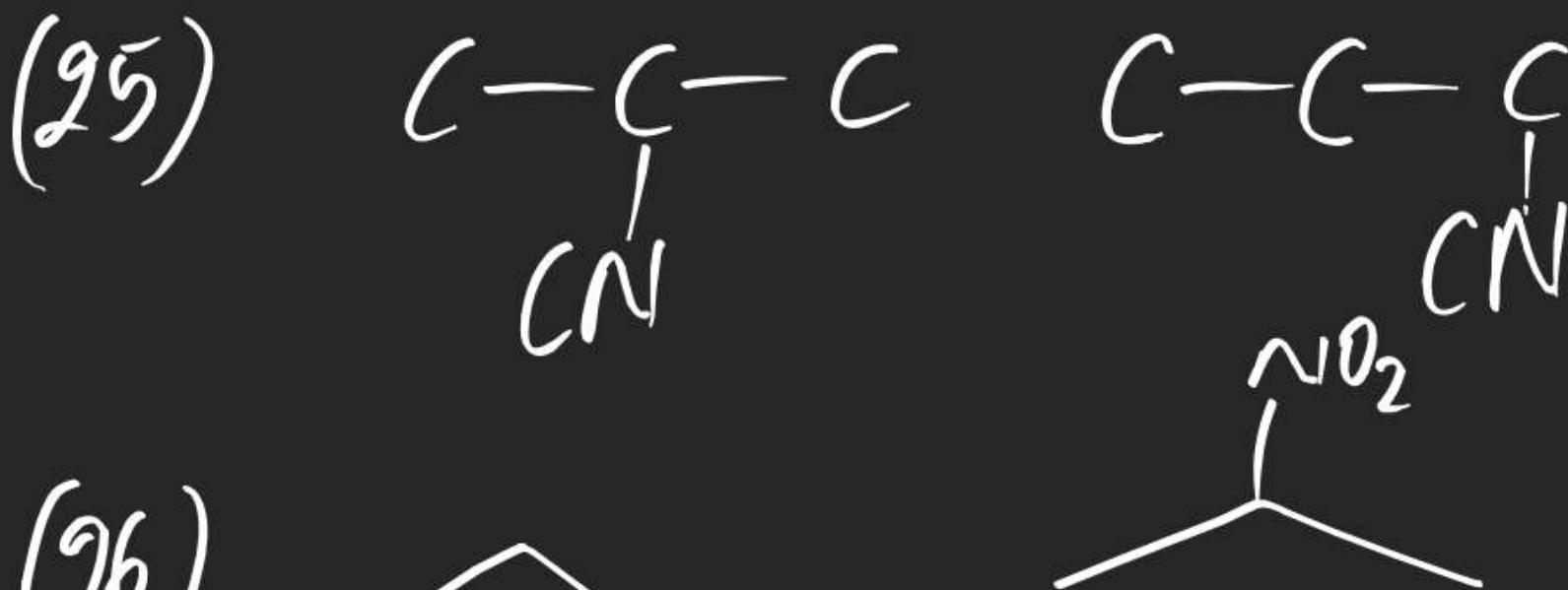
1,3,4

1,2,4

Structural Isomerism



positional
isomers



Structural Isomerism

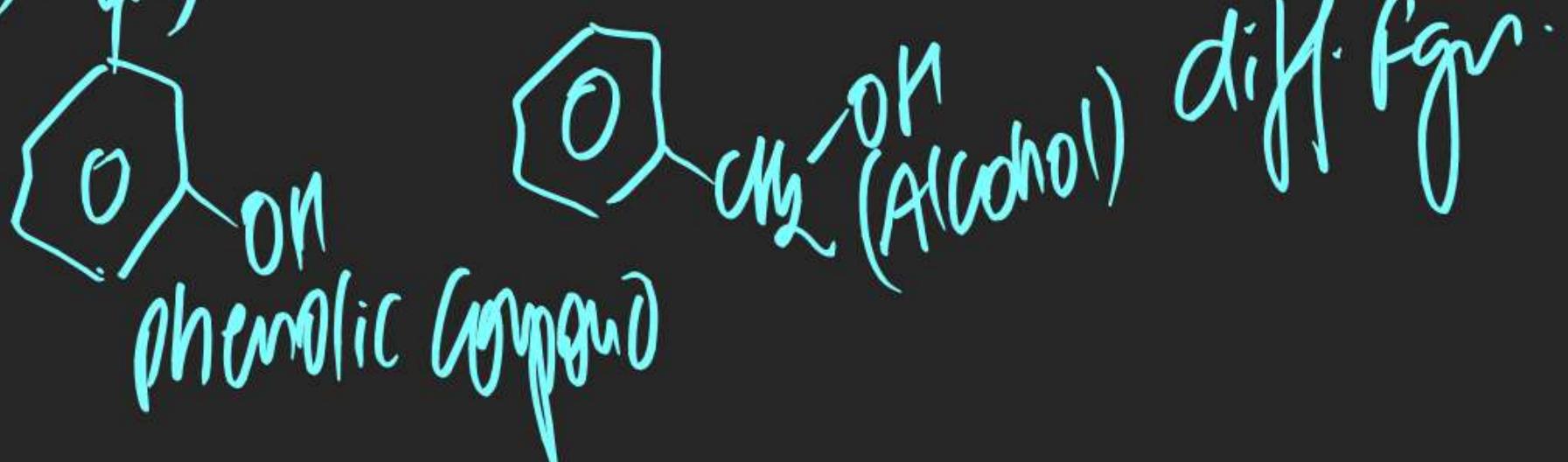
(#) Functional Isomerism:

Compounds having same m.p
But difference in type of functional
groups are known as functional
isomers.

Note (i)



(ii)



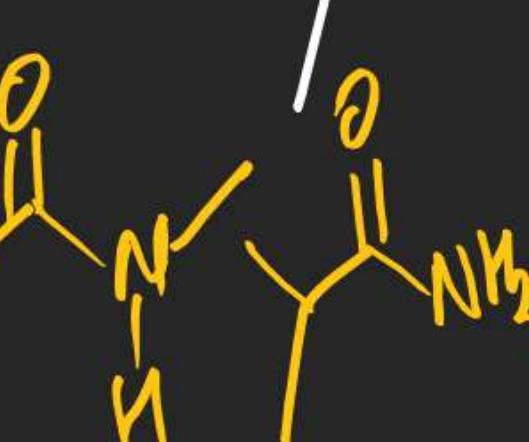
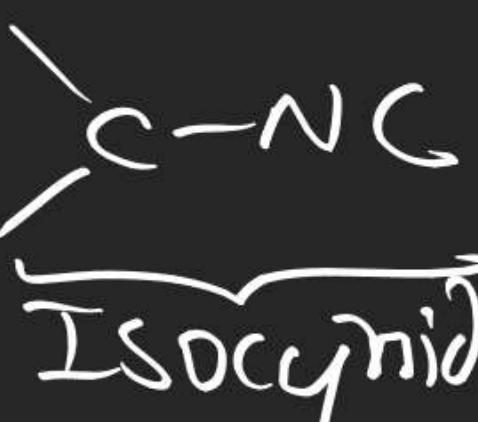
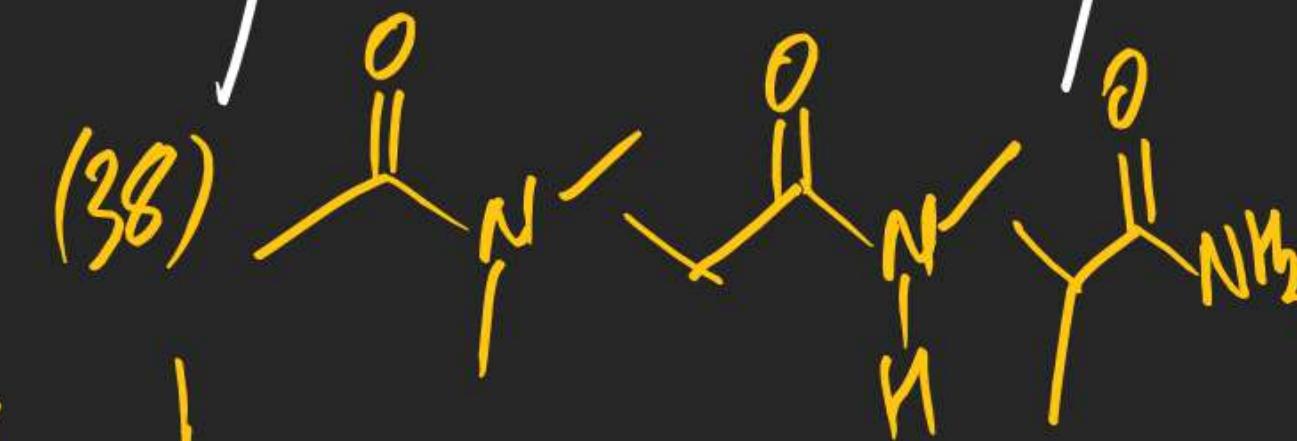
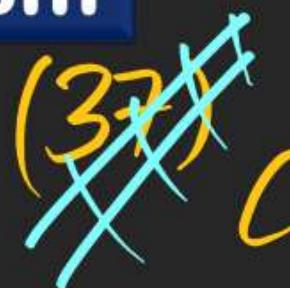
Structural Isomerism



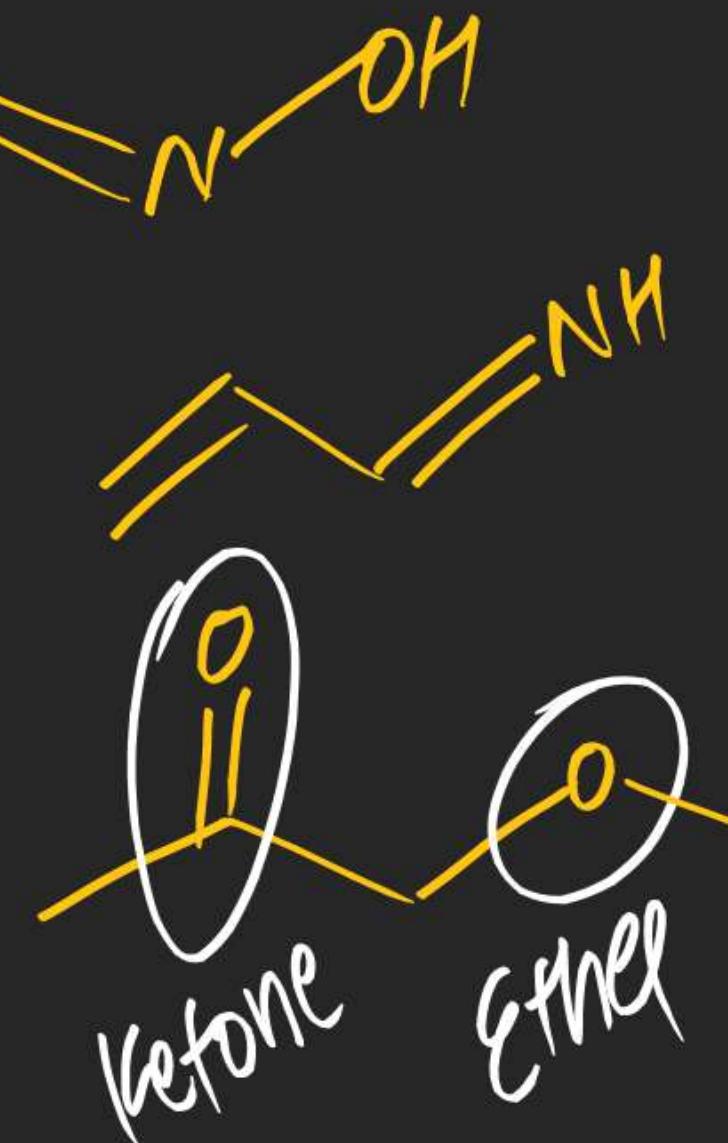
Primary Acid amide Sec. Acid amide Tert. Acid amide



Structural Isomerism



Structural Isomerism



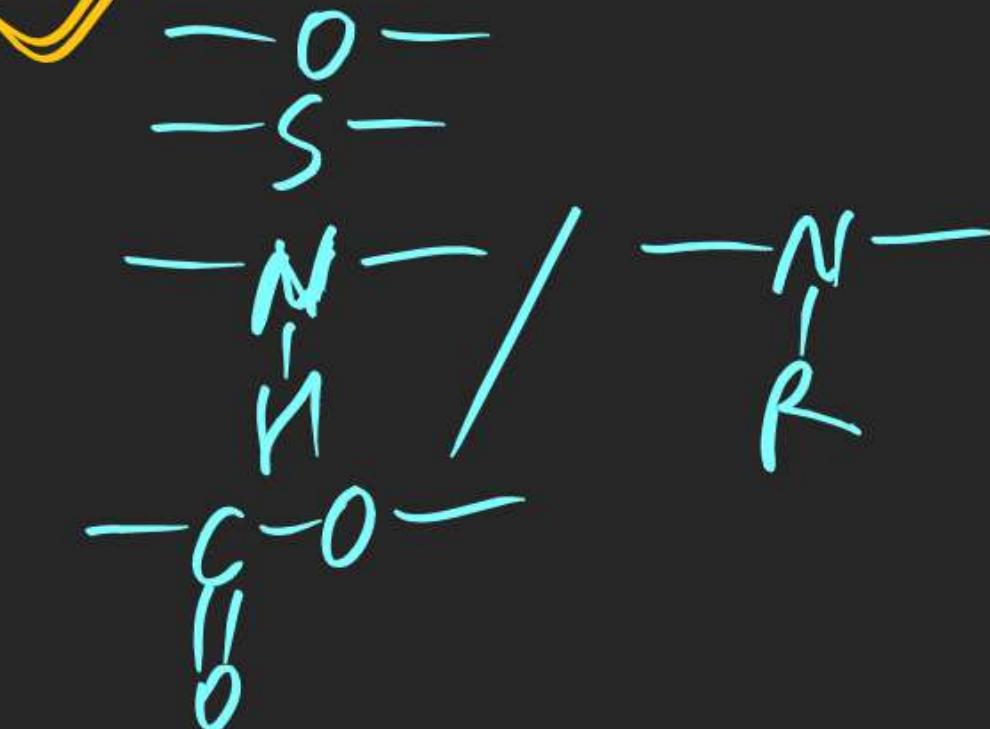
Structural Isomerism

metamerism:

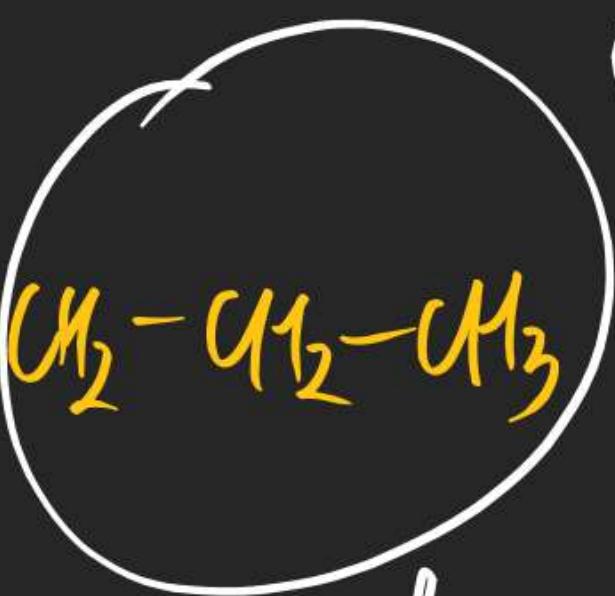
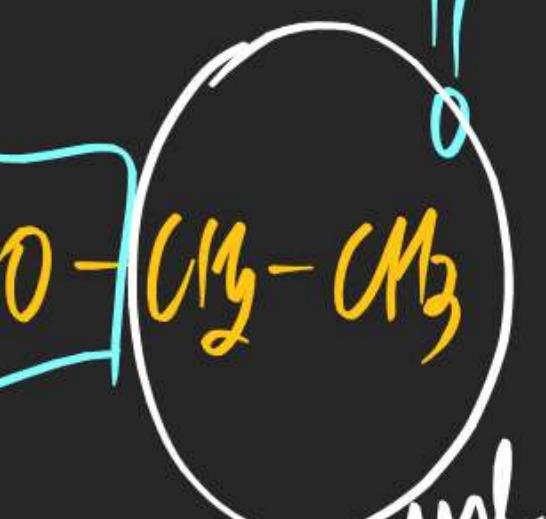
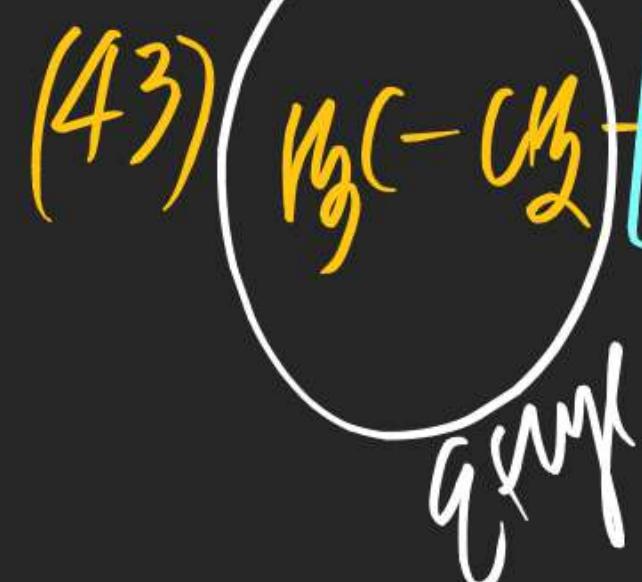
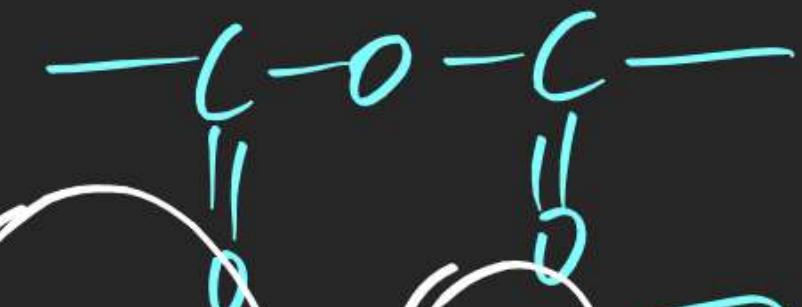
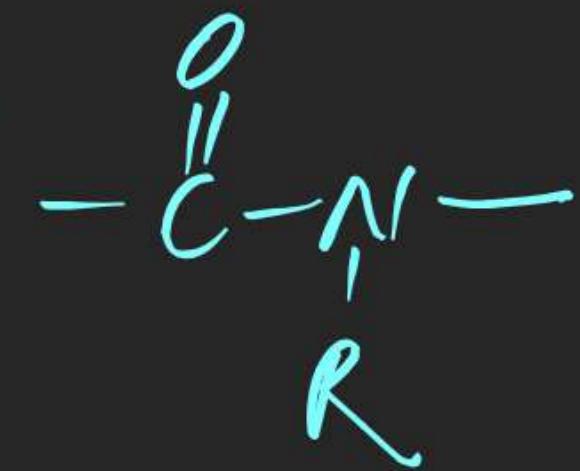
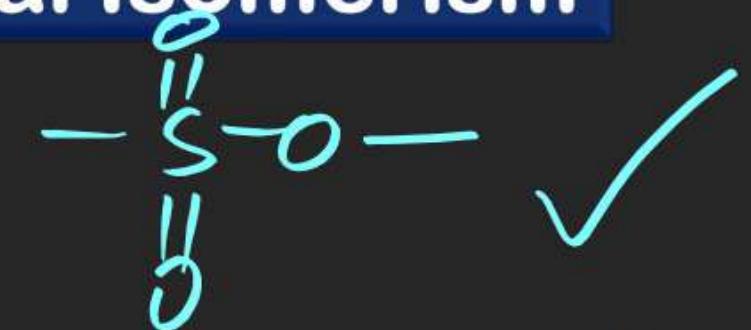
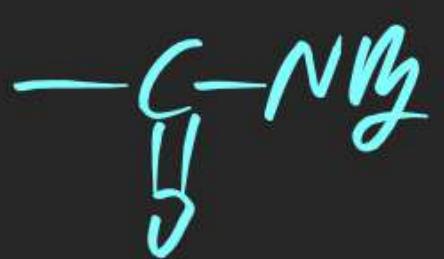
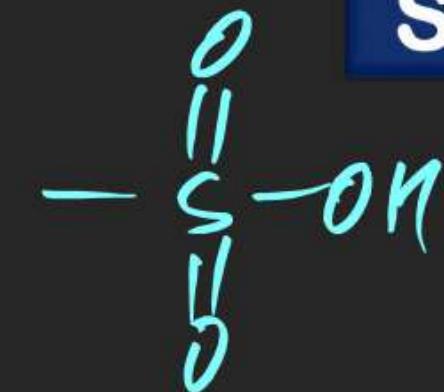
Compounds having same M.F. But difference in alkyl groups w.r.t. to Bi Valent functional groups.

(Bi Valent f-groups)

(mono,
valent
f-group)



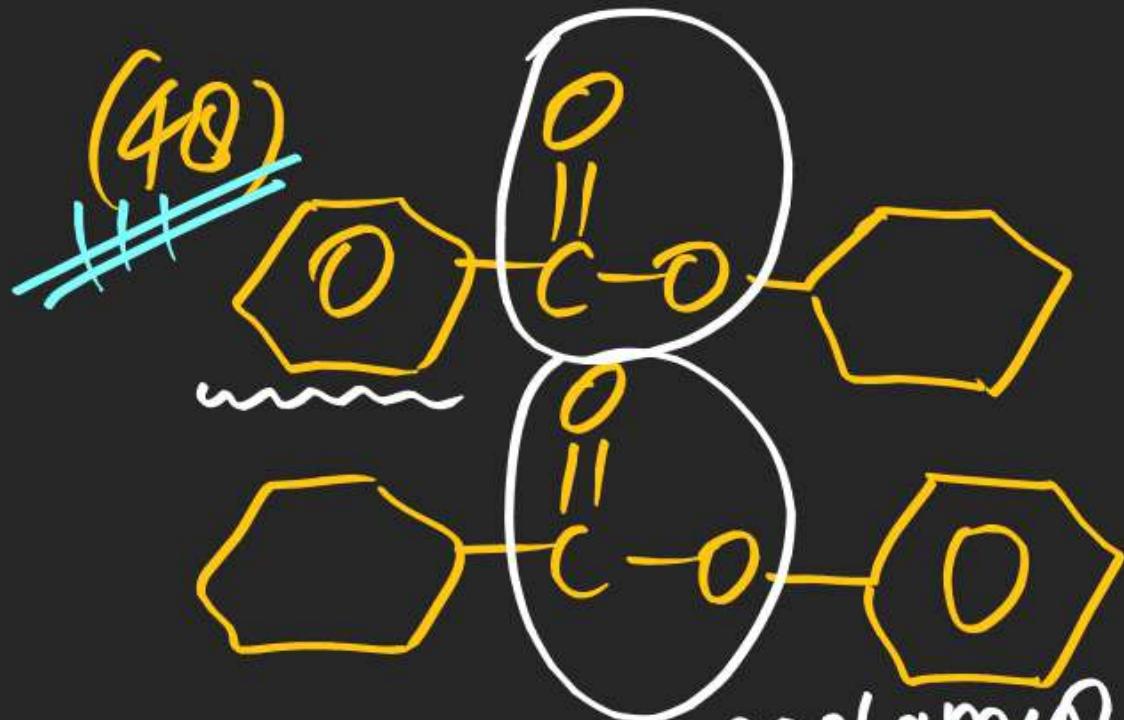
Structural Isomerism



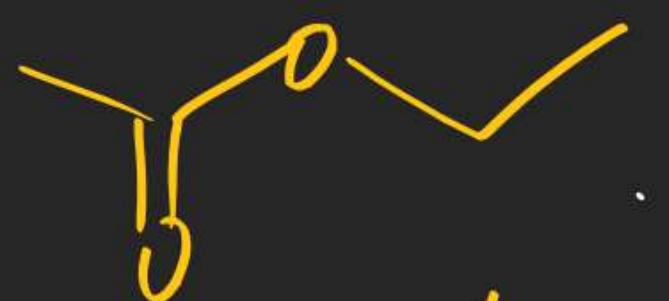
metamers

Structural Isomerism

(44)



(45)



(46)

(47) ~~X~~

(Identical)



Structural Isomerism

