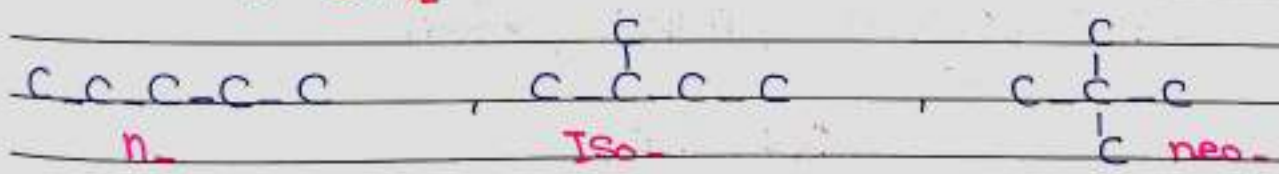
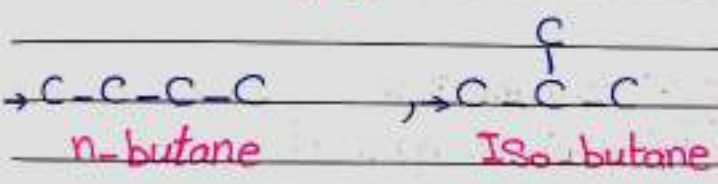
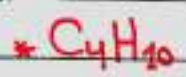


ISOMERISM:

- | | |
|--|--|
| <p>↓ structural</p> <ul style="list-style-type: none"> • chain, skelton, nuclear • Position • functional group • metamerism • Tautomerism | <p>↓ stereo</p> <ul style="list-style-type: none"> • Geometrical • optical • Conformational |
|--|--|

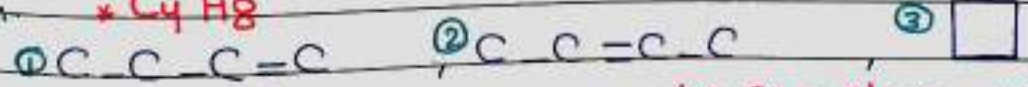
* Chain Isomerism: Compound have the same molecular formula **but** different in kind of chain

examples:



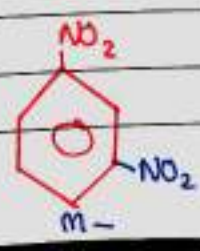
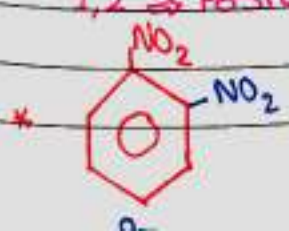
* Position Isomerism: Compounds have the same molecular formula **but** different in position of functional group.

ex.



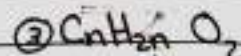
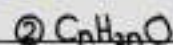
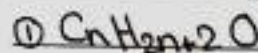
1,2 → Position

1,3 → Ring Chain Isomerism



*functional group ISomerism.

↳ Compounds with the same molecular formula but different in functional groups



alcohol

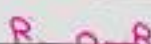
Ether

aldehyde

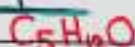
keton

acid

ester



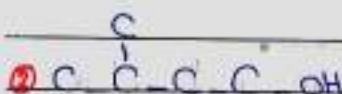
⇒ examples:



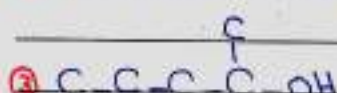
*Alcohol, Ether



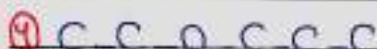
①, ② Chain



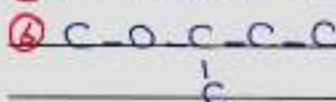
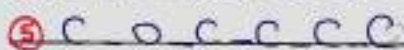
①, ③ position



①, ④ function group



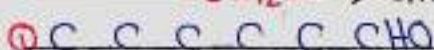
④, ⑤, ⑥ metamerism



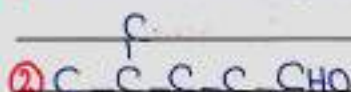
↳ different arrangement around functional group



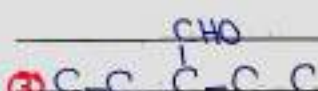
→ Aldehyde, keton



①, ② Chain



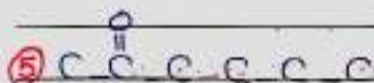
①, ③ position

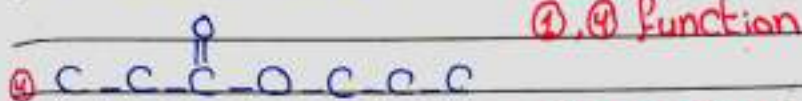
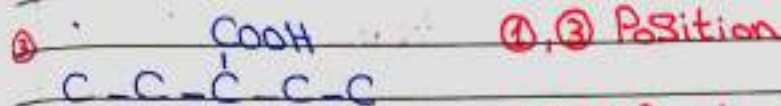
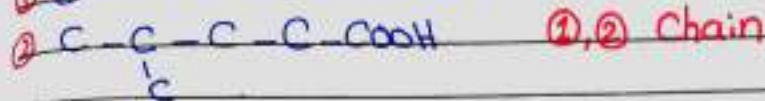
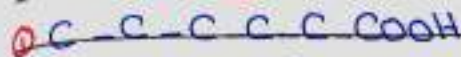
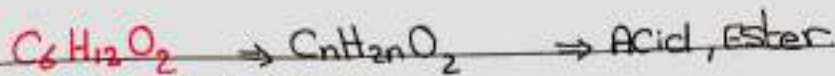


1,4 - 2,4 - 3,4 Functional



④, ⑤ Metamerism



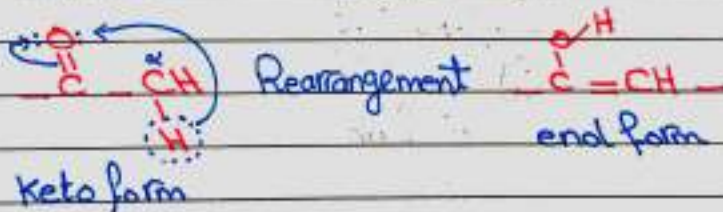


* metamerism: $C_nH_{2n}O$ Functional group $\rightarrow$ ketons, Ether, Secondary amine, tertiary amine, NH

* Tautomerism:

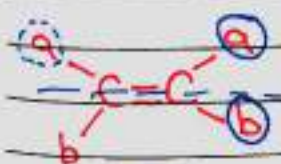
* keto form is more stable than enol form in Aliphatic Comp.

keto form $\rightarrow$ keton $C=O$ enol form $\rightarrow$ alcohol $-OH$



* enol is more stable in Aromatic Comp.

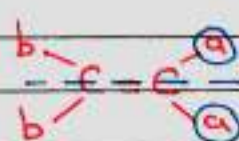
* Geometrical Isomerism: Compound have the same M.F but different in arrangement of atom or groups around double bond or cycle.



cis

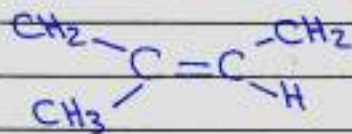
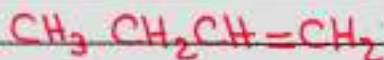
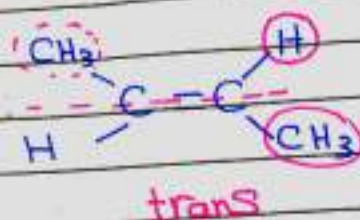
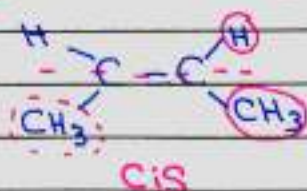


trans



no cis, no trans

- each C atom have double bond contain two different group.



no cis, no trans

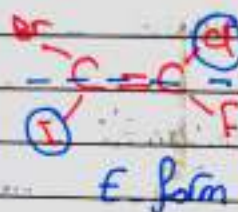
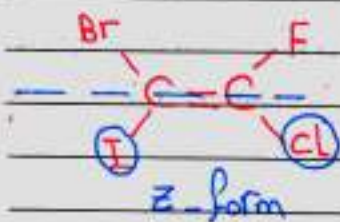
* في حالة وجود 4 ذرات مختلفة من العناصر في الرابطة التنايبية
يتم التحديد حسب الذرة الأكبر في الوزن الذري

Z form يطابق $\rightarrow$ cis

E form يطابق $\rightarrow$ trans

F
Cl
Br
I

يزيد الوزن
الذري



* عند اختيار الذرات من الرابطة المزدوجة نأخذ أكبر في الوزن الذري