

(2) Stereochemistry

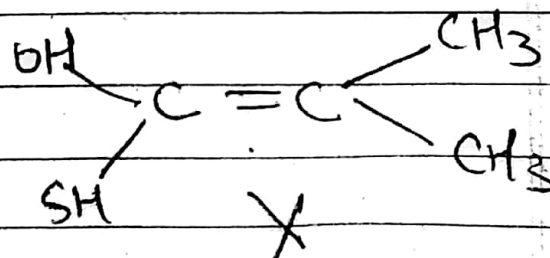
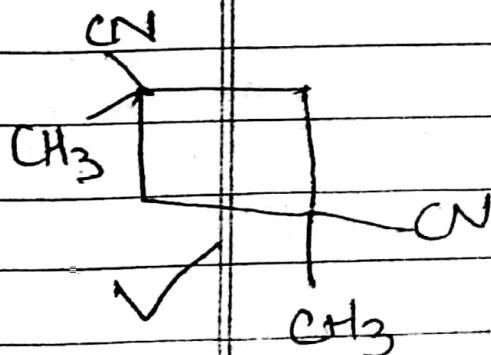
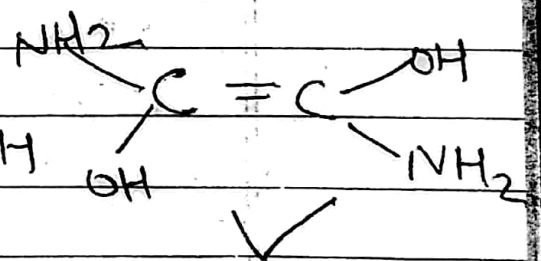
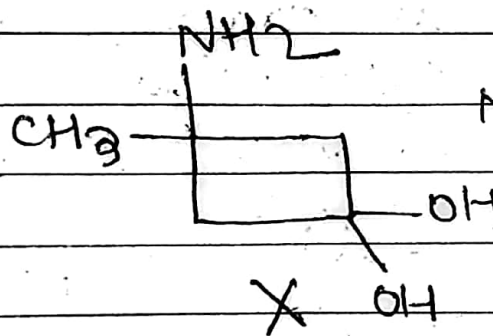
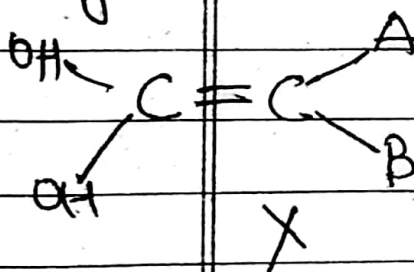
* Geometrical Isomerism

It is a type of stereoisomerism (the spatial arrangement of atom or group to obtain stability)

* Condition for Geometrical isomerism

- i) Compound contain at least one double bond or ring
- ii) Each double bonded atom or group having two different atom or group

eg:-

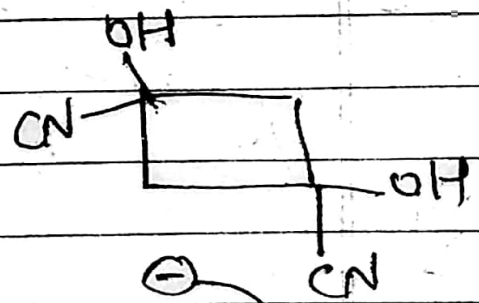
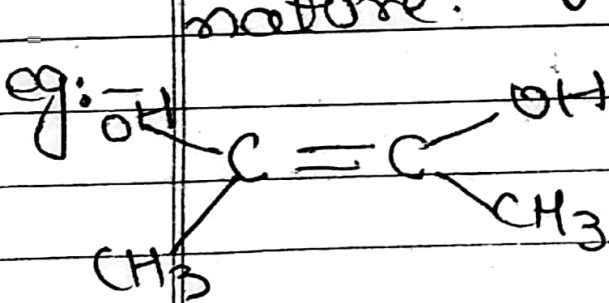


* It is of 3 types

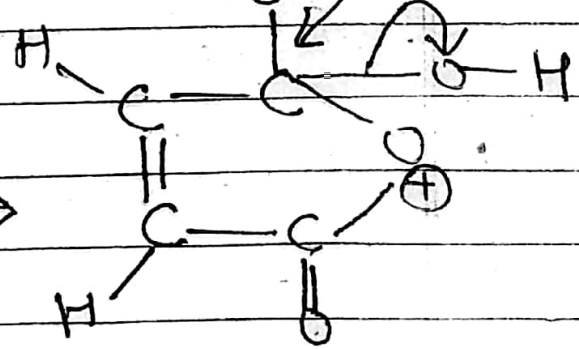
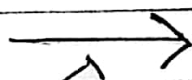
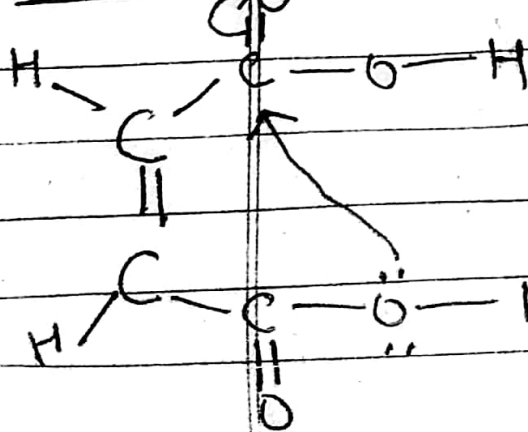
- (1) Cis isomerism
- (2) Trans isomerism
- (3) E-Z isomerism

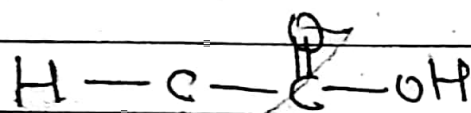
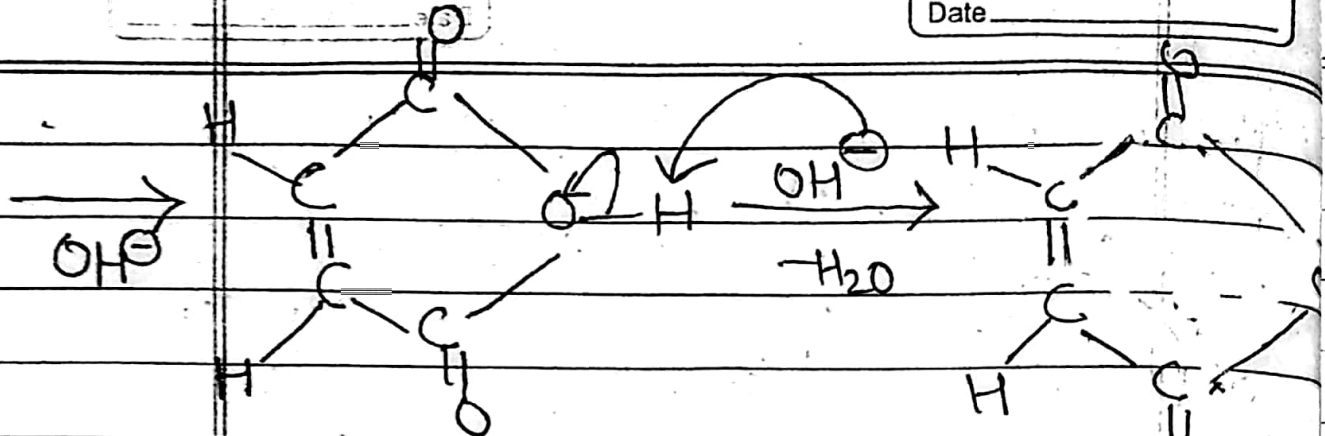
* Cis Isomerism

- When diagonal atom or group are different hence, unsymmetrical (non-mirror) image hence polar, more reactive and having more dipole moment as well as reactive nature than trans isomerism.
- It having less melting point, boiling point and stability than trans isomer.
- Cis - 1,2 - dicarboxylic acid form anhydride after loss of water due to reactive nature of cis but trans isomer can not make anhydride due to stable nature.

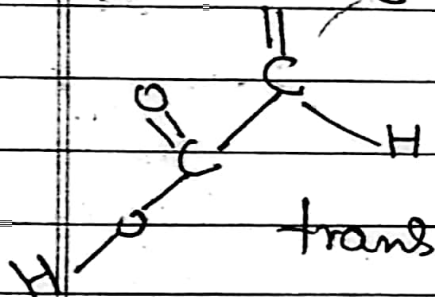


Mech:





Acid anhydride



trans

* Trans isomerism

- When diagonal atom or group are same hence, symmetrical (mirror image) hence non-polar less reactive and having less dipole moment as well as unreactive nature than cis isomerism.
- It having more melting point, b.p and stability than cis isomerism due to symmetrical str.
- Trans-1,2-dicarboxylic acid doesn't form anhydride after loss of water due to stability nature of trans but cis isomer can make anhydride due to stable nature.