[chemistry]

[Priming]

when a boiler is steaming rapidly some particles of the liquid water are carried along with the steam.

this process of the wet steam formation is called priming. Priming is caused by :-

⇒ High steam velocityes.

⇒ Sudden boiling

⇒ High level of water in boilers

⇒ the present of large amount of dissolved salids.

[Foaming]

Foaming is the production of persistent form or water bubbles at the surface of water boiler, which do not break easily is called foaming process.

[Sludge]

Sludge is a soft, slimy deposit on the inside formed of the boiler.

which is easy to remove.

[Scale]

Scale is a hard, sticky deposit on the inner surface of the boiler.

which is difficult to remove.

[Isomerism]

when two or more compounds with the same molecules and structural formula but different spatial arrangement of atom or group is know as stereo - isomerism.

[Optical stereo isomerism]

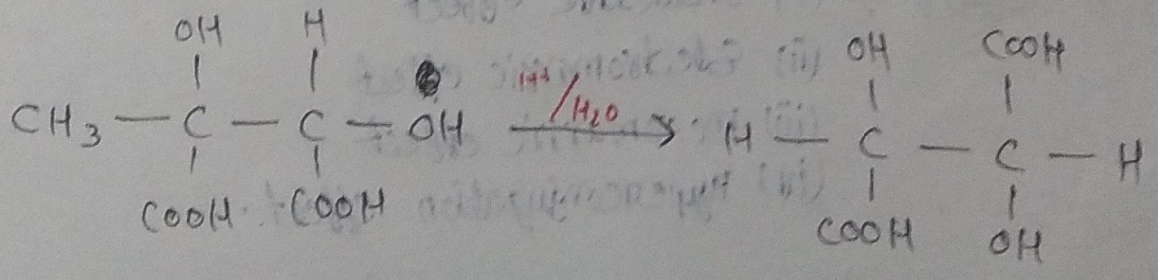
Optical isomerism is a types of stereo isomerism.

which the isomerism have the same molecules formula and structural formula.

But different in their direction of rotation of plane polarized light.

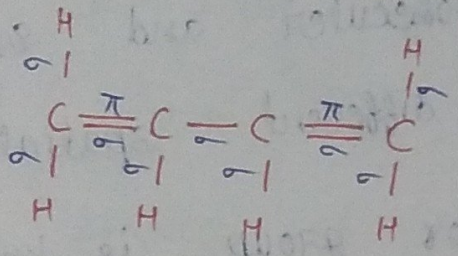
There are two types of isomerism:-

(i) D - Types (ii) L - Types.



[structure of Butadine]

Molecular formula = C_4H_6

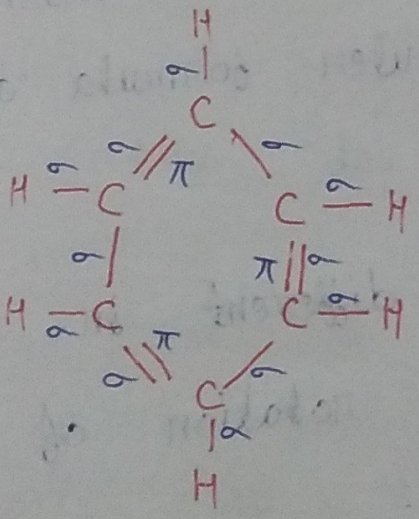


1σ bond = 9σ (due to the present of (-) and (=) bond)

1π bond = 2π (due to the present of (-) bond)

Following effect = (i) Inductive effect
(ii) Electromarric effect
(iii) mesomarric effect.

[structure of Benzien]



1σ bond = 12σ (due to the present of (-) and (=) bond)

1π bond = 3π (due to the present of (=) bond

Following effect ⇒ (i) Inductive effect
(ii) Electromarric effect
(iii) mesomarric effect
(iv) Hyperconjugation effect.

[VSEPR Theory]

The rules of the Valence Shell Electron Pair Repulsion Theory are:-

(i) The shape of the molecule is determined by the number of electron pairs.

(ii) Bond pair of electron are attached to two nucleus. But long pair of electrons are attached to one nucleus.

(iii) The magnitude of repulsion between bonding pairs of electrons depends on the electronegativity.

(iv) The VSEPR Theory is a model used to predict 3D - molecular geometry.

(v) In VSEPR Theory double bond causes more repulsion then single bonds.

[Periodic Properties]

The properties which show a recurring gradation within the same group or along a period are know as periodic properties.

Group (up - Down)	Period (Left - Right)
Atomic radius (↑)	Atomic radius (↓)
Ionization Energy (↓)	Ionization Energy (↑)
Partial Energy (↑)	Partial Energy (↓)
Magnetic field (↓)	Magnetic field (↑)
Charge [1 to 4 (↑)]	[-3 to -1] (↑)

Example ⇒ Valency, Atomic radii, Electronegativity.

[Substitution Reaction]

In the substitution item groups are replace by another groups all the groups of item are know as substitution.

Example ⇒ $C_2H_5OH + HBr \longrightarrow C_2H_5Br + H_2O$

[Nucleophilic Substitution Reaction]

The substitution reaction where the nucleophilic attack on substrate and replaced the ion or group by other ion or groups are know as nucleophilic substitution reaction.

[S_N1 Reaction]

(i) It is the unimolecular substitution reaction.

(ii) It is the two step reaction.

(iii) 1st step always slow reaction

(iv) 2nd step always fast reaction.

(v) It is also know as 1st order nucleophilic substitution reaction.

$$C_2H_5Br \longrightarrow C_2H_5 + Br \quad \text{— (i) step}$$

$$C_2H_5 + OH \longrightarrow C_2H_5OH \quad \text{— (ii) step}$$

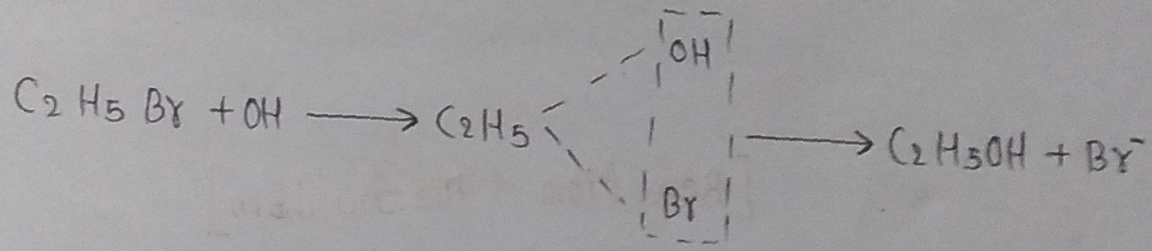
[Sn_2 Reaction]

① It is the bemolecular substitution reaction.

It is one step reaction.

It is also know as 2nd order nucleophilic substitution reaction.

In Sn_2 reaction the rate of the reaction allowys the dependent on consontaions of substitution or consontaions reagent both.



[Elimination Reaction]

An elimination reaction is a types of organic reaction in which two substituents are removed from a molecule in either a one - or - two step mechanism.

It is called elemination reaction.

$$CH_3-CH_3 \xrightarrow[\Delta]{-H_2} CH_2-CH_2 \quad H \xrightarrow{-H_2} CH_2=CH_2 \longrightarrow CH-H_2 \equiv CH + H_2$$

[Reaction Mechanism]

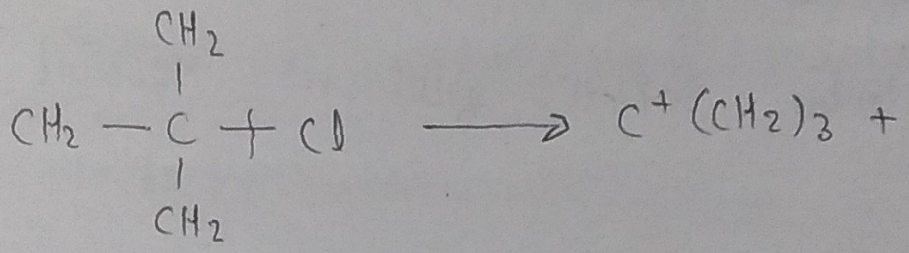
A reaction mechanism is the step by step sequence of elementary reactions by which overall chemical change occurs.

[Reaction Intermediate]

On the basis of the charge of the bond. there are four types of reaction intermediate.

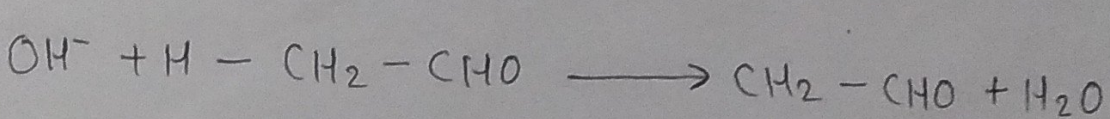
(i) [Carbocation]

A chemical species having positive (+) charge on carbon and 6 electron in valence shell.



(ii) [Carbonion ion]

A chemical species having negative (−) charge on carbon and 8 electron in valence shell.



[Corrosion Theory]

Corrosion occurs everywhere & represents a huge economic loss.

It can be reduce the substancially by the proper understanding of the corrosion process and taking appropriate control measures.

Corrosion theory is produced through dissolving metal, which generates electrons.

[VBT]

⇒ The rule of Velance Bond Theory are follow:-

⇒ The VBT describes the electronic structure of molecules.

⇒ In this theory the electrons of one atom are attracted to the nucleus of another atom.

⇒ The Valance Bond Theory, proposed by the american scientiste Linus Pouling and John C. Slater.

⇒ VBT does not give explain magnetic properties and data.

⇒ VBT does not explain the colour indicated by coordination compounds.