

Unit 1

Table of Some Elements

Atomic Number :

Element	H	He	Be	B	C	N	O	F
A.N.	1	2	4	5	6	7	8	9

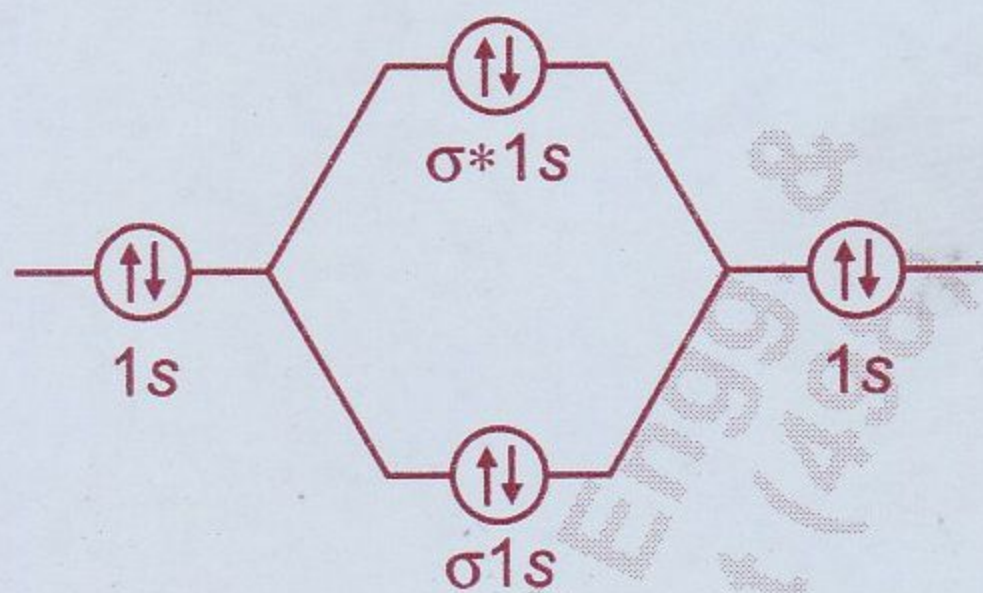
Electronic Configuration

B	2, 3	$1s^2, 2s^2, 2p_x^1$
C	2, 4	$1s^2, 2s^2, 2p_x^1, 2p_y^1$
N	2, 5	$1s^2, 2s^2, 2p_x^1, 2p_y^1, 2p_z^1$
O	2, 6	$1s^2, 2s^2, 2p_x^2, 2p_y^1, 2p_z^1$
F	2, 7	$1s^2, 2s^2, 2p_x^2, 2p_y^2, 2p_z^1$

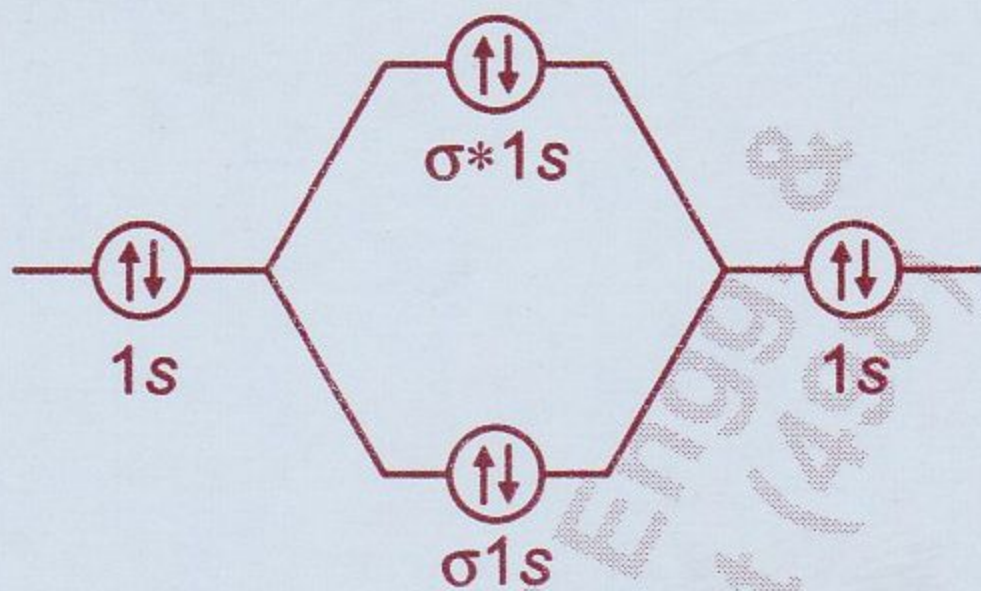
orbitals of two atoms which contains at least one unpaired electrons.

MOLECULAR ORBITAL THEORY

Those diatomic molecule whose atoms have less than or equal to 14 electron in their molecular orbital.



Those diatomic molecule whose atoms have less than or equal to 14 electron in their molecular orbital.



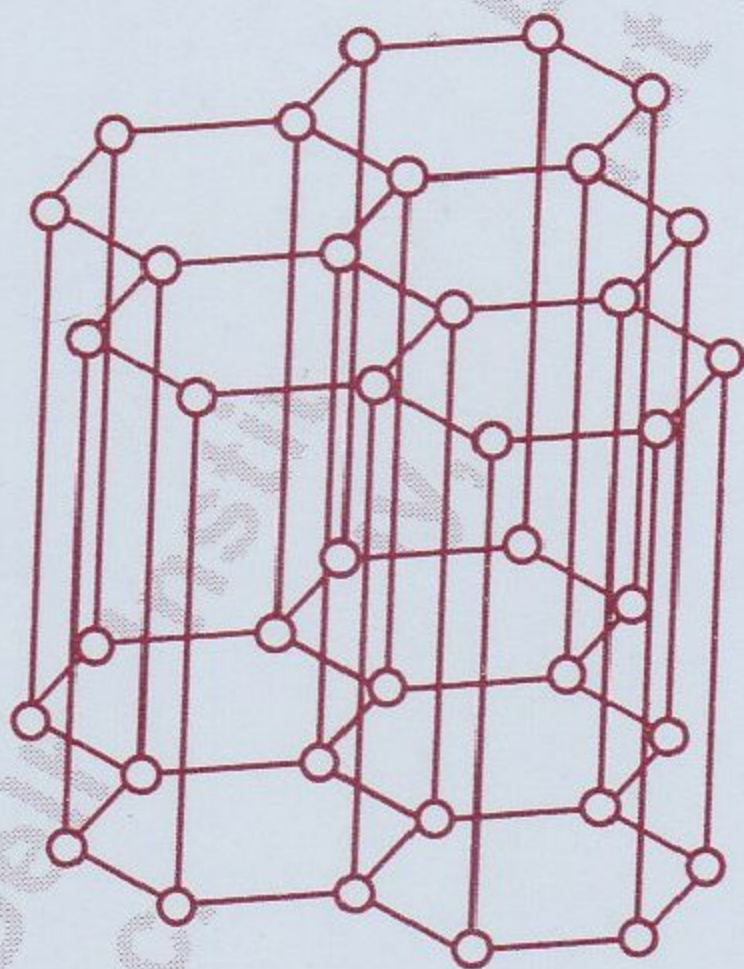
a = Edge Length

N_A = Avagadro's Number

Bragg's Equation

$$n\lambda = 2d \sin \theta$$

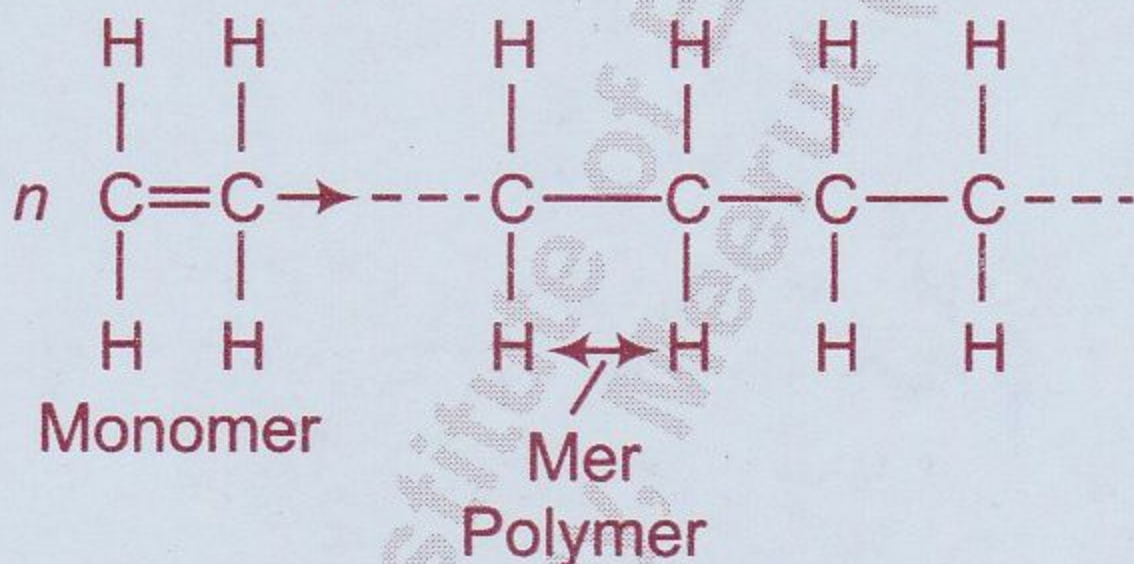
Graphite



Unit 2

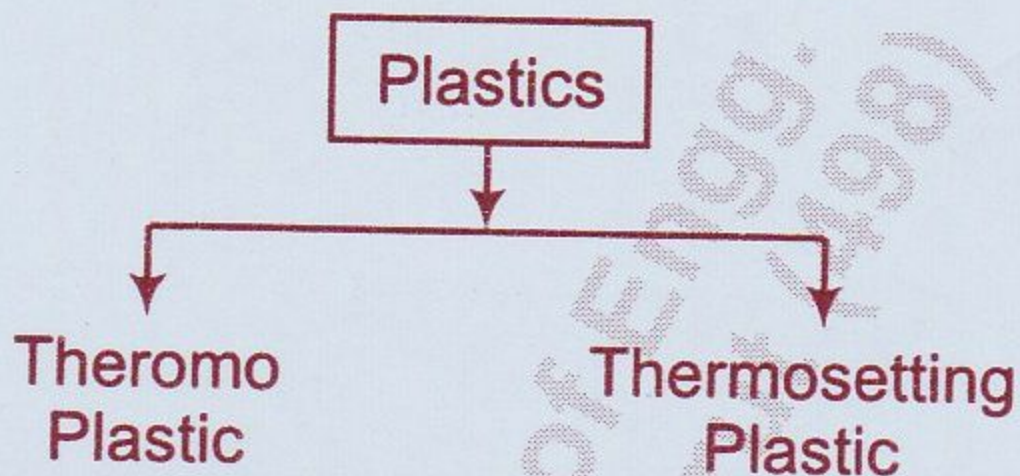
Polymers

Polymers (Poly = many, mers
-Unit or part)



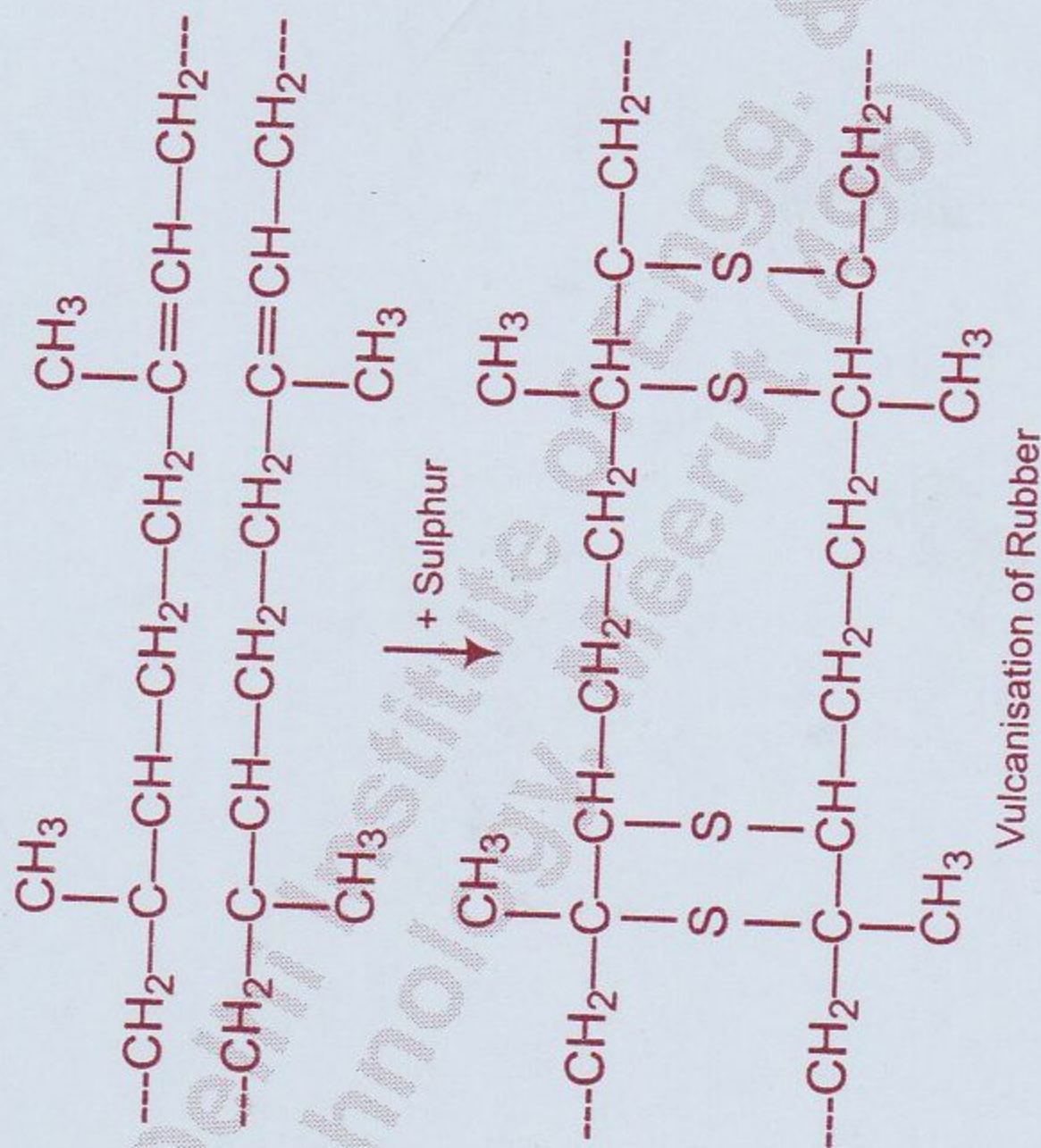
Types of Polymers

1. A Polymer may consist of identical monomer called Homo Polymers.



Different type of polymers

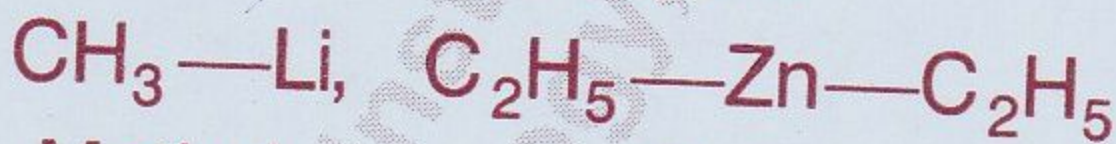
1. Elastomer Resins
Biodegradable Polymers
2. Fibers Conducting
Polymers



2. Poly methyl methacrylate
3. Nylon-6 : 6
4. Poly styrene
5. Poly ethene
6. Polytetra jeuroethylene
7. Poly acetylene

Organo metallic Compounds

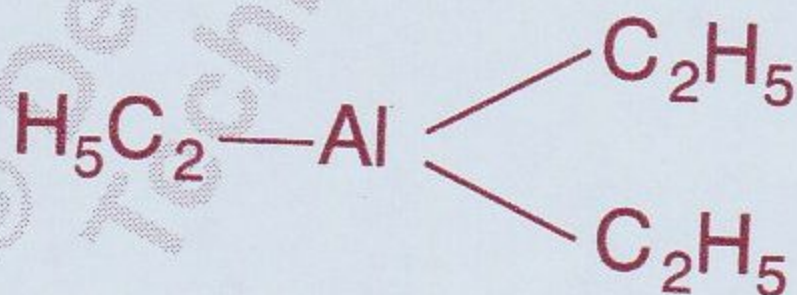
In which carbon atom directly linked to metal atom.

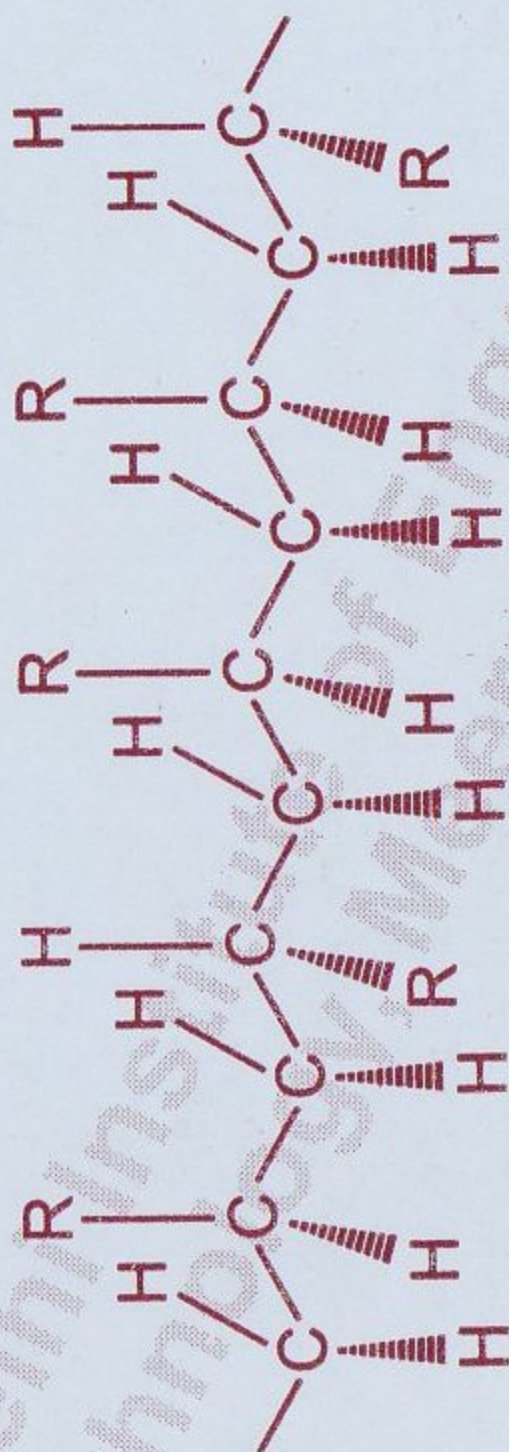


Methyl

Diethyl zinc

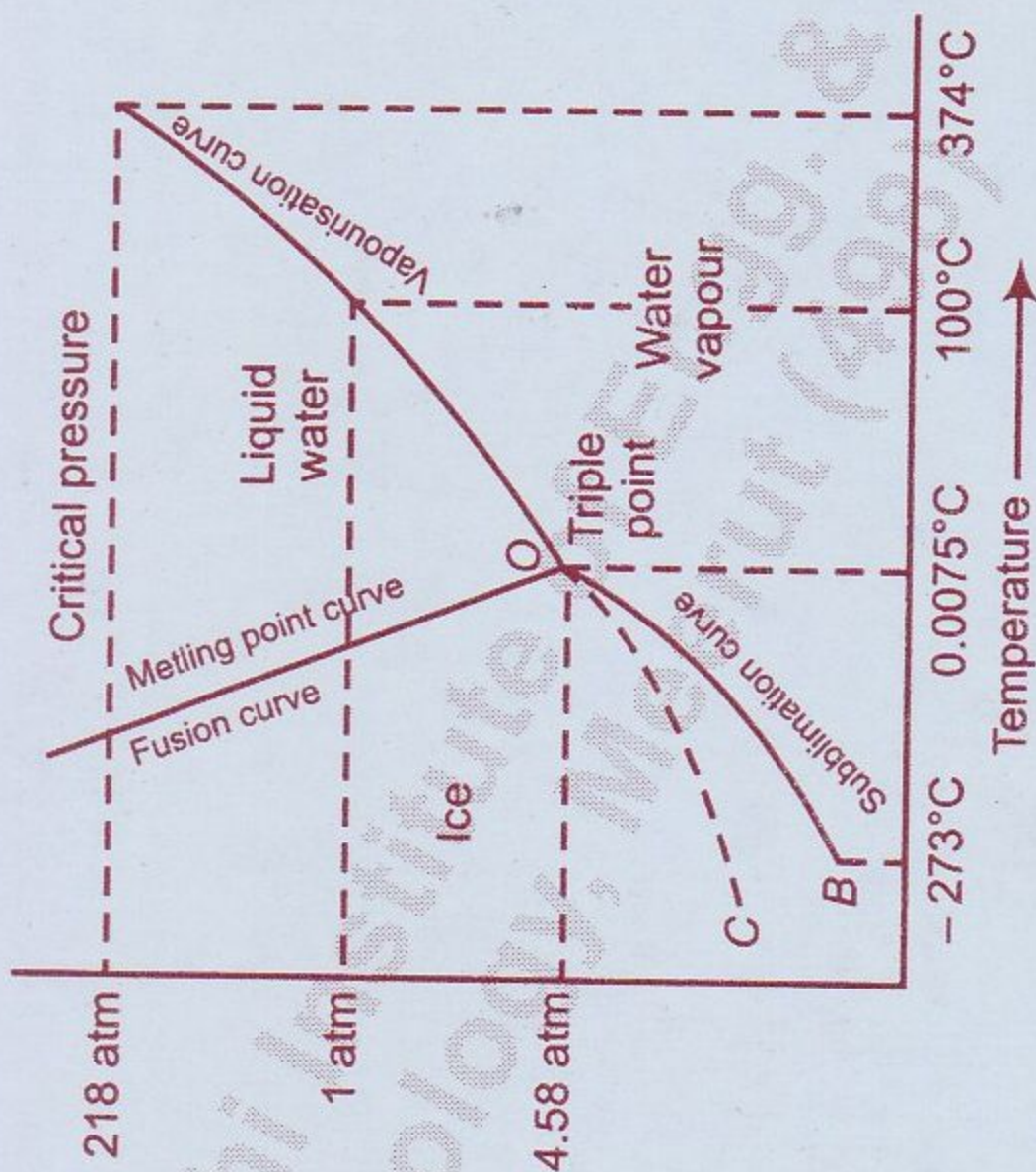
Lithium

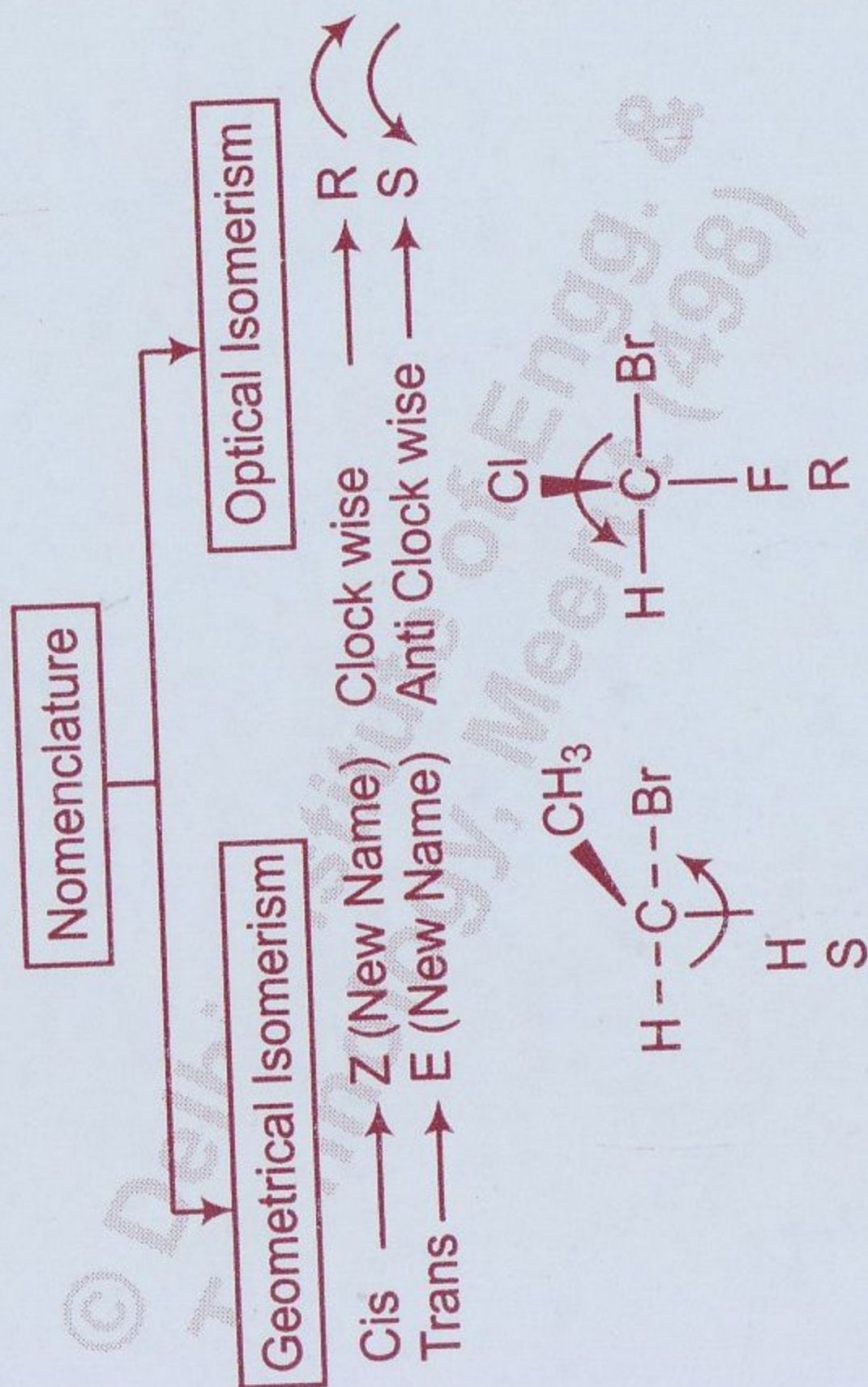


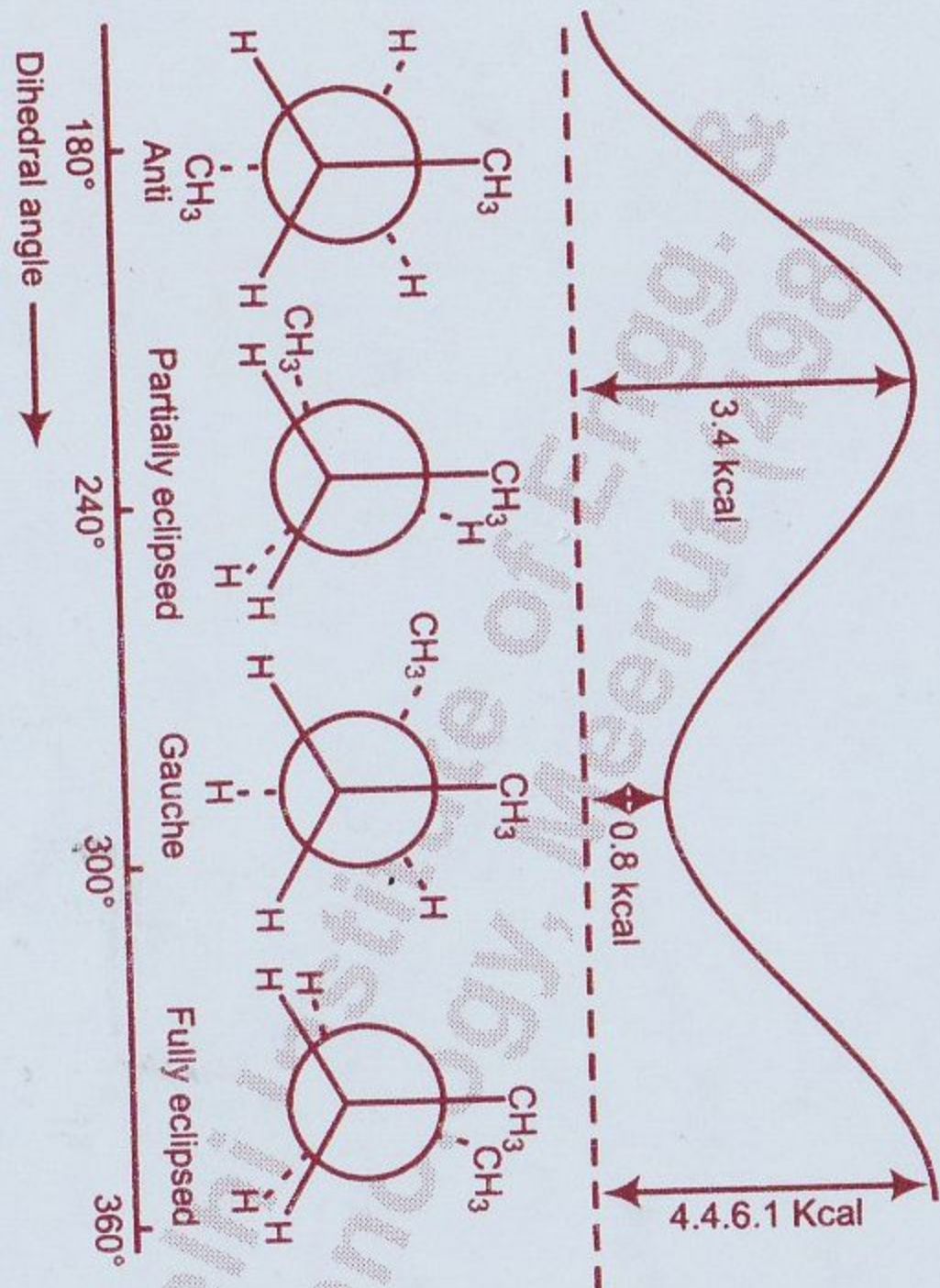


Polypropylene

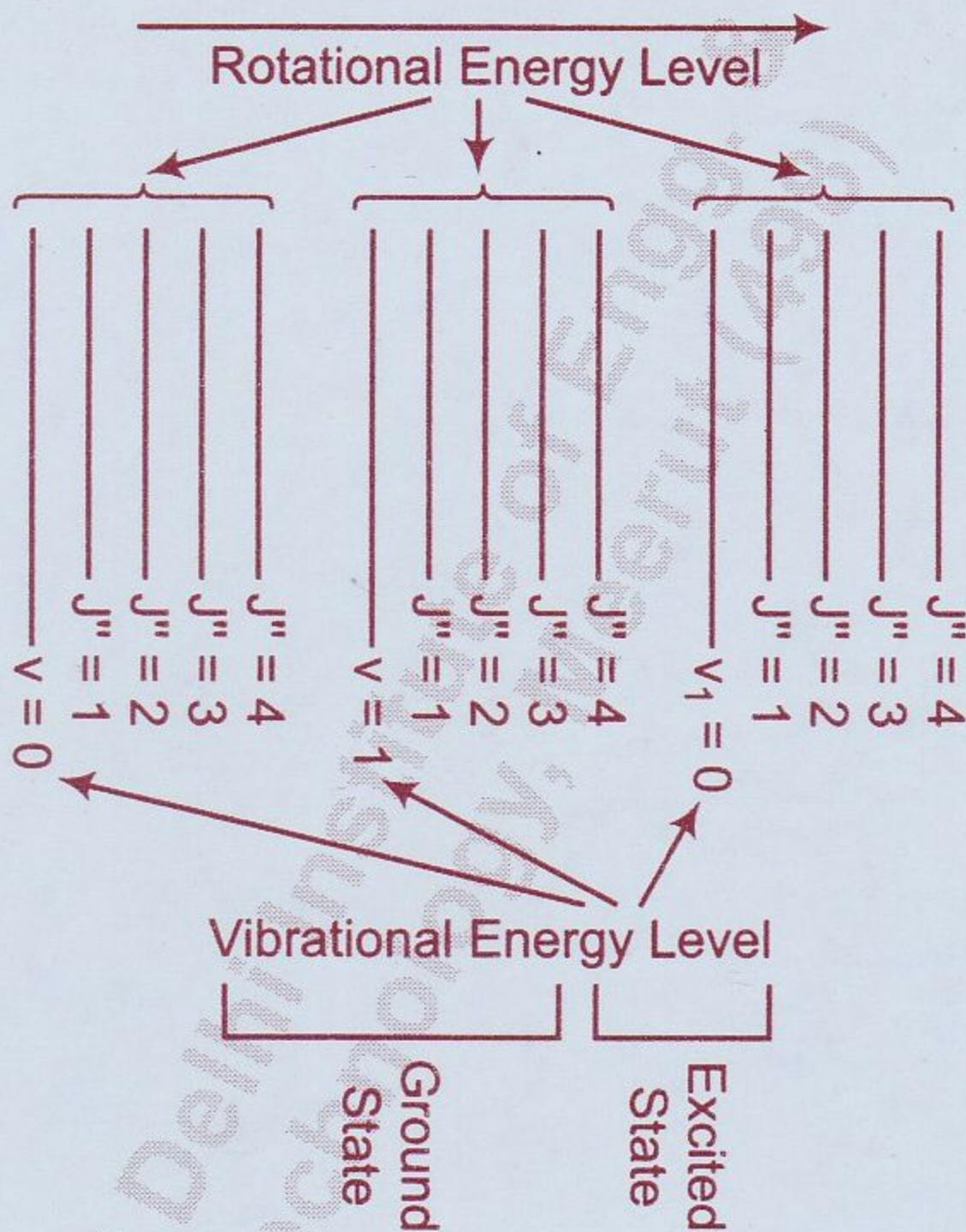
Water System



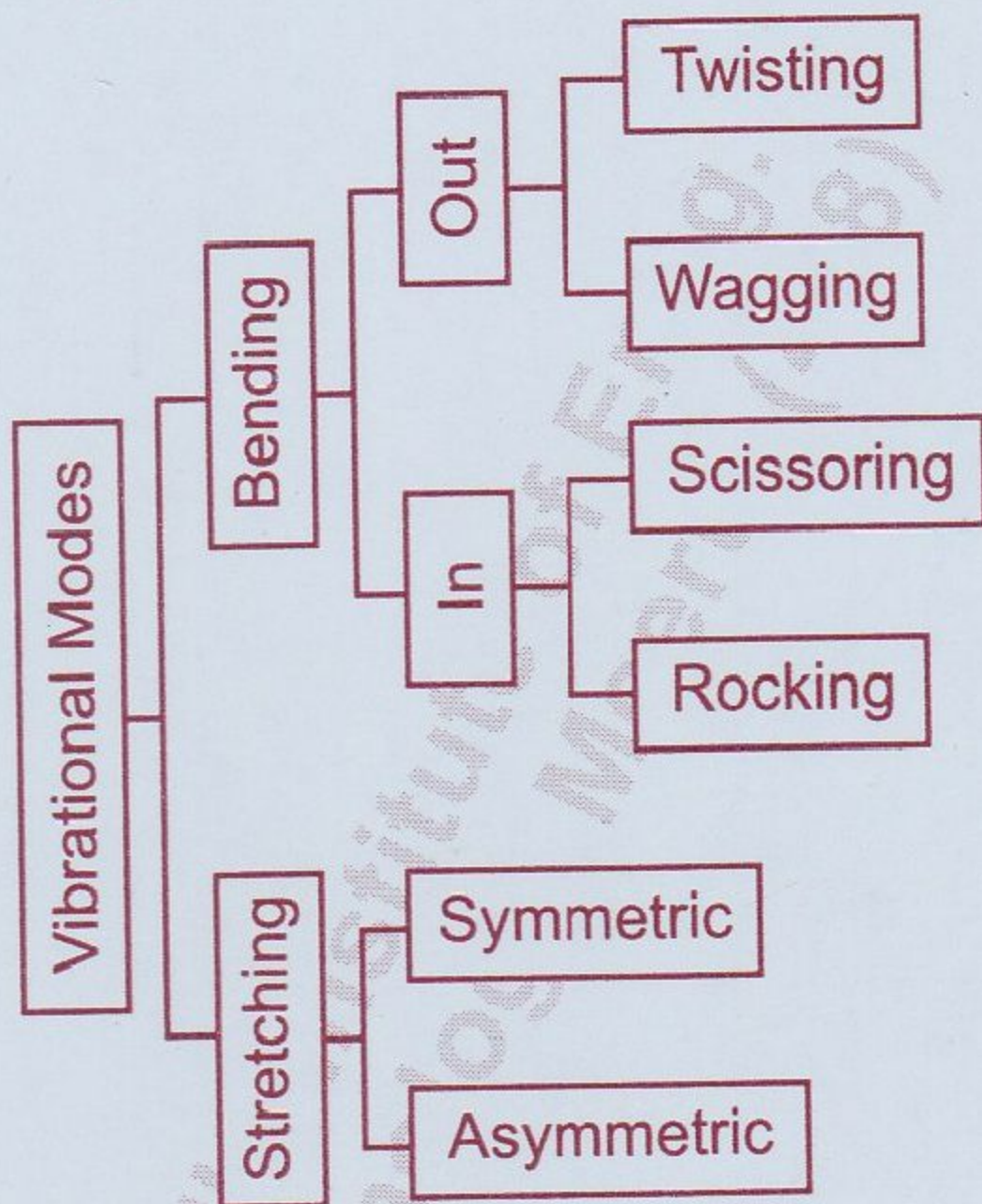


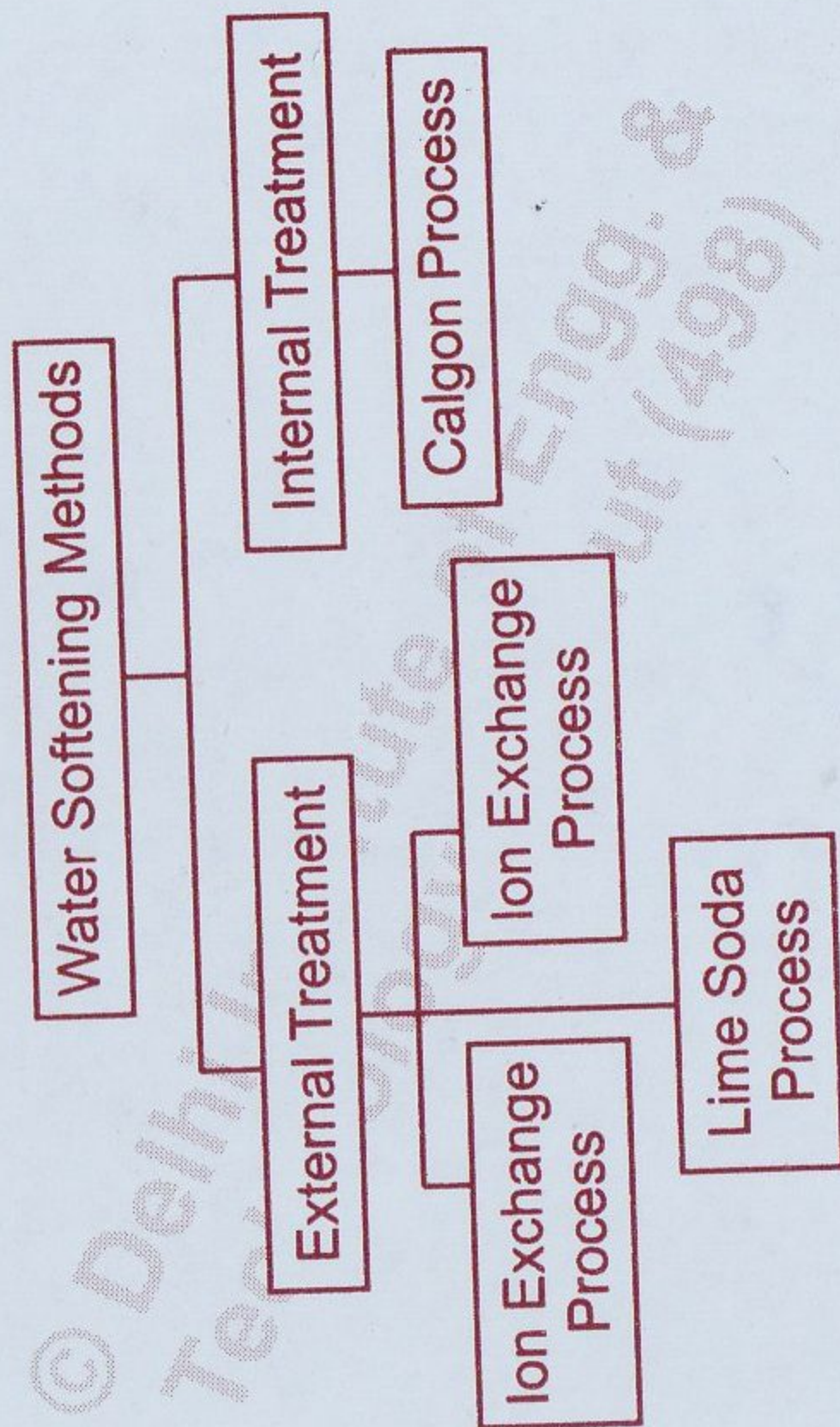


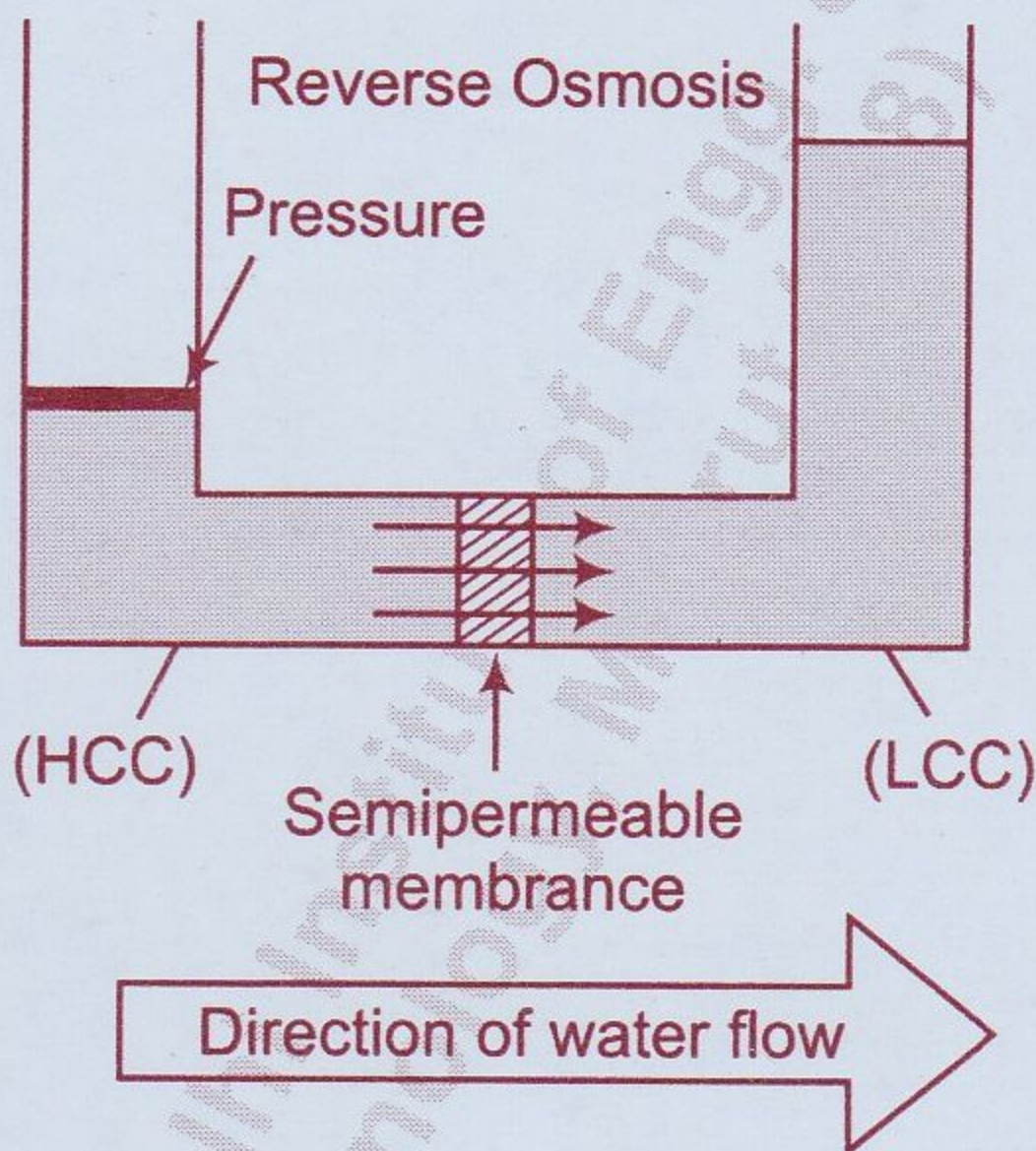
Different Types of Energies



IR spectroscopy







3. Gaseous-Producer gas, Oil gas etc.

Calorific Value of a fuel

"The amount of heat produced, When a unit mass (or volume) of the fuel is burnt completely.

Unit of Heat

$$\begin{aligned} 1. \text{ Calorie} &= 4.185 \text{ Joule} \\ &= 4.185 \times 10^7 \text{ erg} \end{aligned}$$

British Thermal Unit (B.Th.U.)

$$1. \text{ Kcal} = 3.968 \text{ B.Th.U.}$$

Centigrade Heat Unit (C.H.U.)

$$1. \text{ Kcal} = 22 \text{ C.H.U.}$$

Cement

A Material Possessing adhesive and cohesive Properties and capable of bonding materials such as stones, / bricks, etc

Composition

1. Calcium oxide

Basis Corrosion

1. Dry or Direct chemical corrosion
2. Wet or Immersed corrosion

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