

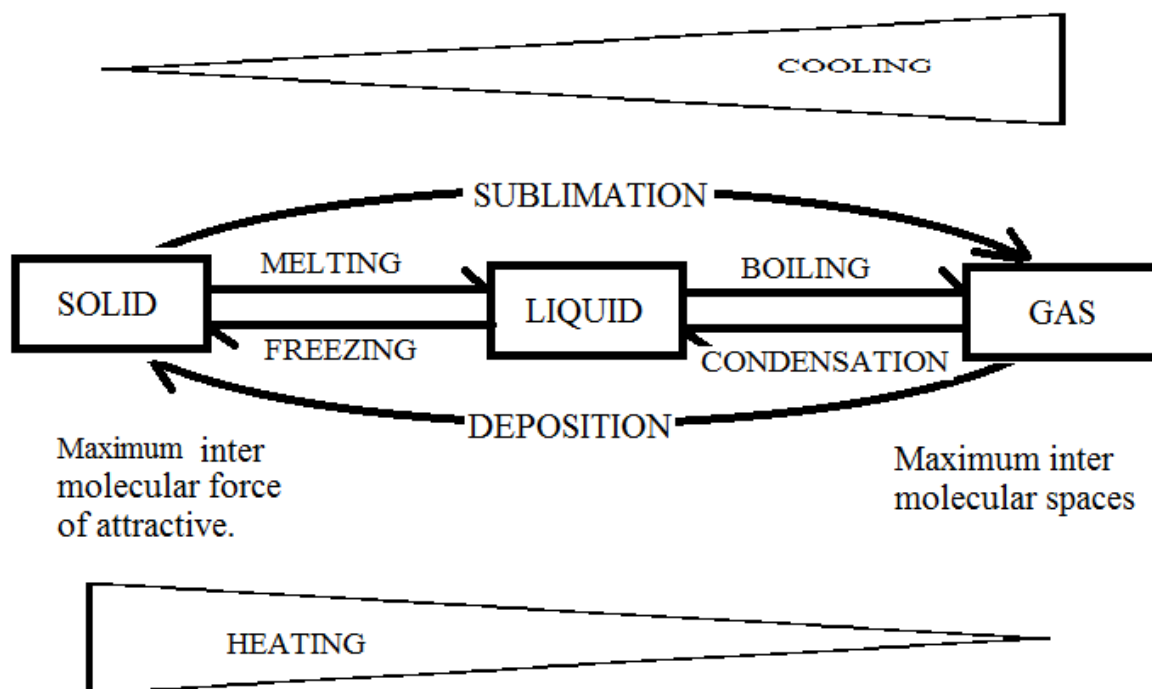
# PHYSICS

## Class – VIII

### Chapter States of Matter

#### Kinetic theory of matter

- 1- According to kinetic theory of matter, matter is composed of large number of identical, very small in size particles that are in continuous random motion due to what they possess kinetic energy that is directly proportional to the absolute temperature is temperature in Kelvin scale. The force of attractive & the space between the particles are respectively called intra molecular force of attractive & intramolecular space between them.
- 2- Change of state always takes place at constant temperature while change of temperature takes place at two same state.
- 3- States and their inter conversion



#### FORMULA & NAME OF SOME IONS FOR IX & X – CLASS

- |    |            |   |                       |     |             |   |              |
|----|------------|---|-----------------------|-----|-------------|---|--------------|
| 1- | $H^+$      | → | hydrogen ion = proton | 9-  | $Sn^{++++}$ | → | Stannic ion  |
| 2- | $OH^-$     | → | hydroxide ion         | 10- | $Pb^{++}$   | → | Plumbous ion |
| 3- | $Na^+$     | → | sodium ion            | 11- | $Pb^{++++}$ | → | Plumbic ion  |
| 4- | $K^+$      | → | potassium ion         | 12- | $Fe^{++}$   | → | ferrous ion  |
| 5- | $Ca^{++}$  | → | Calcium ion           | 13- | $Fe^{++++}$ | → | ferric ion   |
| 6- | $Mg^{++}$  | → | magnesium ion         | 14- | $Cu^+$      | → | Cuprous ion  |
| 7- | $Al^{+++}$ | → | aluminium ion         | 15- | $Cu^{++}$   | → | Cupric ion   |
| 8- | $Sn^{++}$  | → | Stannous ion          |     |             |   |              |

16-	$\text{NH}_4^+$	→	ammonium ion	30-	$\text{CO}_3^{2-}$	→	Carbonate ion
17-	$\text{Zn}^{2+}$	→	zinc ion	31-	$\text{HCO}_3^-$	→	bicarbonate ion
18-	$\text{Au}^+$	→	aurous ion	32-	$\text{CH}_3\text{COO}^-$	→	acetate ion
19-	$\text{Au}^{3+}$	→	auric ion	33-	$\text{PO}_4^{3-}$	→	phosphate ion
20-	$\text{Hg}^{2+}$	→	mercurous ion	34-	$\text{PO}_3^{3-}$	→	Phosphite ion
21-	$\text{N}^{3-}$	→	nitride ion	35-	$\text{O}^{2-}$	→	oxide ion
22-	$\text{NO}_2^-$	→	nitrite ion	36-	$\text{O}_2^{2-}$	→	peroxide ion
23-	$\text{NO}_3^-$	→	nitrate ion	37-	$\text{F}^-$	→	fluoride ion
24-	$\text{S}^{2-}$	→	Sulphide ion	38-	$\text{Cl}^-$	→	Chloride ion
25-	$\text{SO}_3^{2-}$	→	Sulphite ion	39-	$\text{Br}^-$	→	bromide ion
26-	$\text{SO}_4^{2-}$	→	Sulphate ion	40-	$\text{I}^-$	→	iodide ion
27-	$\text{HSO}_3^-$	→	bisulphite ion				
28-	$\text{HSO}_4^-$	→	bisulphate ion				
29-	$\text{C}^{4-}$	→	Carbide ion				

Note:-

- 1- Positively charged ions are called cations or basic radical while negatively charged ions are called anions or acidic radicals
- 2-  $\text{H}^+$  &  $\text{NH}_4^+$  are the only cations which are non-metallic, otherwise they are metallic
- 3- Anions are formed by non-metals.
- 4- Acetate ion is the anion which comes before the cations in a compound, otherwise cations comes before anions

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