

# CHEMISTRY-X

## D+ MODULE Based on Focus Area

### Chapter-1

**\*Shells-K.L.M.N**

**\*Subshells-s,p,d,f**

**\*Subshell present in all shells-s.**

**\*Electrons present in subshells-**

**s=2 p=6 d=10 f=14**

**\*Electronic configuration in subshells-**

**$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$**

**\*Electronic configuration of chromium-**

**$1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$**

**\* Electronic configuration of copper-**

**$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$**

**\*This is because of getting stability.**

**\*While writing the electronic configuration ,the last subshell in which the electron enters is taken as the block.The largest number before the english letter is taken as the period.When the last electron enters in “s” subshell, the group number is same.When it is “p”, then add 12 for getting**

**group number. When it is “d”, then add 2 for getting group.**

**\*Importance of “d” block:**

**They show different oxidation state.**

**They form coloured complex.**

## **Chapter-2**

**\*Pressure and volume are inversely proportional(Boyle’s law).**

**\*Volume and temperature are directly proportional(Charle’s law).**

**\*Mass of an atom expressed in grams-Gram atomic mass.**

**\*1 mole=1Avogadro number= $6.022 \times 10^{23}$**

**\*Mass of a molecule expressed in grams-Gram molecular mass.**

## **Chapter-3**

**\*In reactivity sreies, a metal always displaces metal below its position.**

|           |    |
|-----------|----|
| Potassium | K  |
| Sodium    | Na |
| Calcium   | Ca |
| Magnesium | Mg |
| Aluminium | Al |
| Zinc      | Zn |
| Iron      | Fe |
| Nickel    | Ni |
| Tin       | Sn |
| Lead      | Pb |
| Hydrogen  | H  |
| Copper    | Cu |
| Silver    | Ag |
| Gold      | Au |

**\*The arrangement which converts chemical energy to electrical energy-Galvanic cell.**

**\*On electrolysis of molten sodiumchloride-  
anode-chlorine  
cathode-sodium**

## Chapter-4

**\*The metallic compounds generally seen in the earth's crust are called minerals.**

**\*A mineral from which a metal is economically, easily and quickly extracted, is called the ore.**

**\*Levigation-concentration of oxide ores,  
concentration of the ores of gold.**

**\*Froth floatation-Sulphide ores**

- \*Leaching-Bauxite**
- \*Liquation-tin and lead**
- \*Distillation-zinc, cadmium and mercury**
- \*Calcination-- Calcination is the process of heating the concentrated ore in the absence of air at a temperature below its melting point.**
- \*Roasting -- Roasting is the process of heating the concentrated ore in a current of air at a temperature below its melting point.**
- \*Industrial production of iron--blast furnace--charge-Hematite, limestone and coke reducing agent-carbon monoxide.  
Flux---CaO  
iron formed is called-pig iron.**

## Chapter-5

- \*ammonium chloride and calcium hydroxide are used to prepare-ammonia.**
- \*ammonia gas passed through quick lime-for removing moisture.**
- \*the gas jar used for collecting ammonia is kept**

**inverted- because ammonia is less denser than air.**

**\*Chemical equilibrium --is the stage at which the rate of the forward reaction becomes equal to the rate of the backward reaction.**

**\*Le Chateliers' Principle--When the concentration, pressure or temperature of a system at equilibrium is changed, the system will readjust itself so as to nullify the effect of that change and attain a new state of equilibrium.**

**\*When concentration increases,system tries to decrease it.to increase pressure,increase volume; to decrease pressure,decrease volume.for increasing temperature,exothermic reaction;for decreasing temperature,endothermic reaction.**

## **Chapter-6**

**\*Alkane- $C_nH_{2n+2}$**

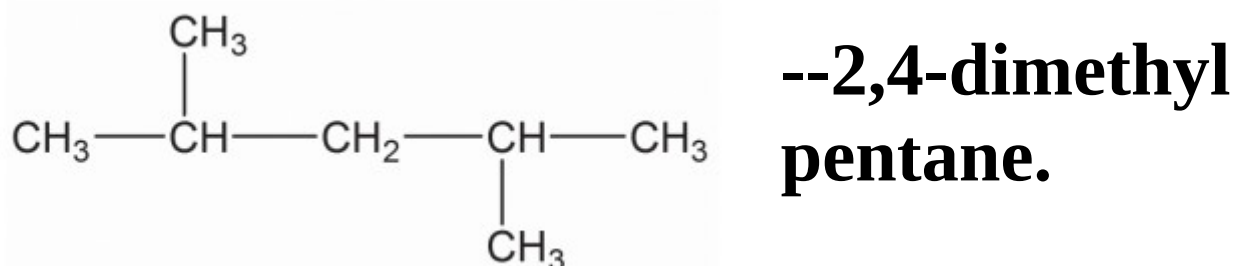
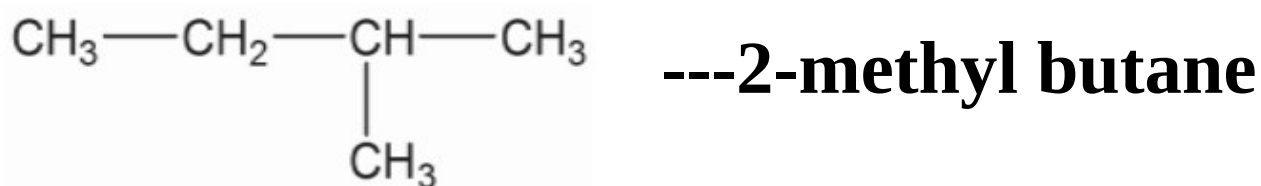
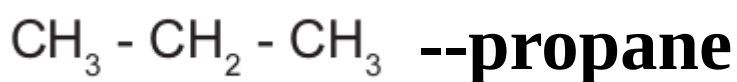
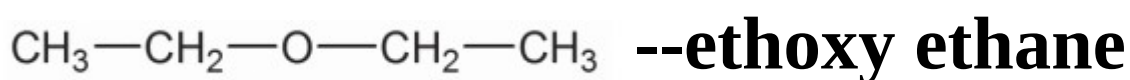
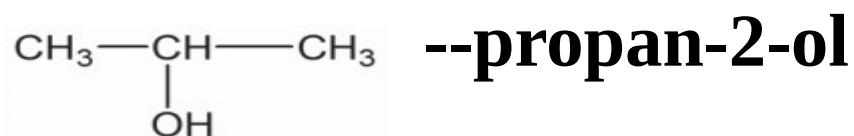
**\*Alkene- $C_nH_{2n}$**

**\*Alkyne- $C_nH_{2n-2}$**

**\*homologous series-**

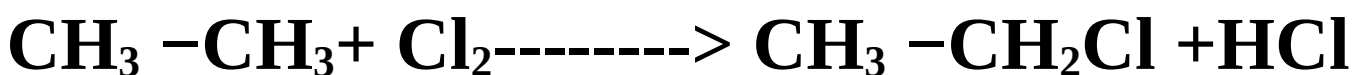
**Successive members differ by a  $-CH_2-$  group.**

**Members show similarity in chemical properties.**  
**\*Compounds having same molecular formula but different chemical and physical properties are called Isomers. The phenomenon is called Isomerism.**



## Chapter-7

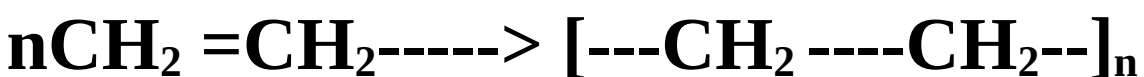
**\*A reaction in which an atom or a group in a compound is replaced by another atom or a group is called substitution reaction.**



**\*Reactions in which unsaturated organic compounds react with other molecules to form saturated compounds are called addition reactions.**



**\*Polymerisation--- the process in which a large number of simple molecules combine under suitable conditions to form complex molecules.**



**\*When hydrocarbons burn they combine with the oxygen in the air to form  $\text{CO}_2$  and  $\text{H}_2\text{O}$ .**



**\*Thermal cracking-Some hydrocarbons with high molecular masses, when heated in the absence of air undergo decomposition to form hydrocarbons with lower molecular masses.**

