

Points to remember

Modern periodic law & Table	<p>Modern periodic law states that the physical and chemical properties of the elements are the periodic functions of their atomic numbers.</p> <p>Modern periodic table : It is a tabular arrangement of elements in periods(rows) and groups(columns), highlighting the regular repetition of properties of the elements.</p>
Metallurgy	<p>It is a science of extracting metals from their ores and modifying them into alloys for various uses.</p> <p>Minerals : single compound or complex mixture of various compounds of metals</p> <p>Ores : mineral from which a metal can be readily and economically extracted.</p> <p>Mining : The Process of extracting the ores from the Earth's crust.</p> <p>Gangue/ Matrix : The rocky impurity associated with an ore.</p> <p>Flux : It is added to the ore to reduce fusion temperature and to remove impurities.</p> <p>Slag : The fusible product formed when flux reacts with gangue during the extraction.</p> <p>Smelting : Process of reducing roasted metallic oxide from metal in its molten state.</p>
Types of Separation (or) Concentration of Ore	<ul style="list-style-type: none"> * Hydraulic method (Gravity separation) : Oxide ores * Magnetic separation method : Tinstone SnO₂, Ore of Tin * Froth floatation method : Sulphide ores * Chemical method (or) Leaching : When ore is in Pure form. Ex : Bauxite
Alloy	An alloy is a homogeneous mixture of two or more metals (or) metals with certain non metallic elements. Types : 1) Ferrous 2) Non – ferrous
Amalgam	It is an alloy of mercury with another metal. Ex : Silver-tin amalgam
Corrosion	<p>It is the gradual destruction of metals by chemical or electrochemical reaction with the environment.</p> <p>Dry/Chemical Corrosion : The corrosive action in the absence of moisture.</p> <p>Wet/ Electrochemical Corrosion: The corrosive action in the presence of moisture.</p>
Prevention of Corrosion	<p>Galvanization : Coating zinc on iron sheets by using electric current.</p> <p>Electroplating : Coating one metal over another metal by passing current.</p> <p>Anodizing : Electro chemical conversion of metal surface into a decorative, durable and corrosion resistant.</p> <p>Cathodic protection : Metal to be protected by coated with a sacrificial metal.</p>

Periodic property	Left to Right in a period	Top to Bottom in a group
<p>Atomic radius : It is the distance between the centre of its nucleus and the outermost shell containing the valence electron.</p> <ul style="list-style-type: none"> • Covalent radius – for non metallic elements • Metallic radius – for metallic elements 	<p>In the same valence shell, the number of protons increases, increasing the attraction of protons over electrons. Thus, atomic/ ionic radius Decreases.</p>	<p>Due to increase in valence shell number, atomic / ionic radius Increases.</p>
<p>Ionic radius : It is the distance from the centre of the nucleus of ion upto the point where it exerts its influence on its electron cloud.</p>		
<p>Ionisation Energy : It is the minimum energy required to remove an electron from an isolated gaseous atom in its ground state to form a cation.</p>	<p>As atomic radius decreases, more energy is required to remove the electrons and so Ionisation Energy Increases.</p>	<p>Atomic radius increases, so valence electrons are loosely bound. Less energy is required to remove the electrons and so IE Decreases.</p>
<p>Electron Affinity : It is the amount of energy released when an isolated gaseous atom gains an electron to form its anion.</p>	<p>Atomic radius decreases and so, electron affinity Increases.</p>	<p>Atomic radius increases and so, valence electrons are loosely bound. ∴ Electron affinity Decreases.</p>
<p>Electronegativity : It is the measure of the tendency of its atom to attract the shared pair of electrons towards itself in a covalent bond.</p>	<p>Increase in nuclear charge attracts the electrons more strongly. ∴ electronegativity Increases.</p>	<p>Increased number of valence shell, electronegativity Decreases.</p>