LC Chemistry – Key Definitions

Radioactivity	Radioactivity is defined as the spontaneous breaking up of certain unstable nuclei, accompanied by the emission of radiation.
Alpha Particles	Alpha particles are helium nuclei, with a positive charge and little penetrating ability.
Beta Particles	Beta particles are electrons, with a negative charge and greater penetrating ability than alpha particles.

Cut dotted horizontal lines. Fold vertical lines.

LC Chemistry – Key Definitions

Gamma Rays	Gamma rays are high-energy electromagnetic radiation, with greater penetrating ability than beta particles.
Heisenberg Uncertainty Principle	The Heisenberg Uncertainty Principle states that it is not possible to determine at the same time the exact position and velocity of an electron.
Aufbau Principle	The Aufbau Principle states that electrons will occupy the lowest energy sublevel available.

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LC Chemistry – Key Definitions

Atomic Radius	The atomic radius of an element is defined as half the distance between the nuclei of two atoms of the element that are joined together by a single covalent bond.
First Ionisation Energy	The first ionisation energy of an element is defined as the minimum energy in kilojoules required to remove the most loosely bound electron from each isolated atom in a mole of the element in its ground state .
Second Ionisation Energy	The second ionisation energy is the energy required to remove the most loosely bound electron from each singly charged positive ion in a mole of these ions.

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LC Chemistry – Key Definitions

Water of Crystallisation	Water of crystallisation is water chemically combined in definite proportions in a crystalline compound.
Valency	The valency of an element is the number of bonds each atom of the element forms when it reacts.
Ionic Bond	An ionic bond is the electrostatic force of attraction between oppositely charged ions.

Cut dotted horizontal lines. Fold vertical lines.

LC Chemistry – Key Definitions

Covalent Bond	A covalent bond is formed when two atoms share a pair of electrons.
Sigma Bond	A sigma bond is a covalent bond between two atoms formed by end-on overlap of orbitals.
Pi Bond	A pi bond is a covalent bond between two atoms formed by sideways overlap of orbitals

Cut dotted horizontal lines. Fold vertical lines.

LC Chemistry – Key Definitions

Polar Covalent Bond	A polar covalent bond is a covalent bond in which there is unequal sharing of electrons.
Electronegativity	Electronegativity is the relative attraction of an atom for shared pairs of electrons in a covalent bond.
Electron Pair Repulsion Theory	The electron pairs in the valance (outer) shell of the central atom repel each other and end up as far apart as is geometrically possible. Lone pairs have a greater repelling effect than bonding pairs.

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LC Chemistry – Key Definitions

Hydrogen Bonding	Hydrogen bonding is a special type of dipole-dipole interaction, which occurs when hydrogen is bonded to small, highly electronegative atoms such as O, N or F.
Boyle's Law	At a constant temperature, the volume of a given mass of any gas is inversely proportional to the pressure of the gas.
Charles's Law	At a constant pressure, the volume of a given mass of any gas is directly proportional to the Kelvin temperature.

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LC Chemistry – Key Definitions

Gay-Lussac's Law of Combining Volumes

When gasses react, the volumes consumed in the reaction bear a simple whole number ratio to each other and to the volumes of any gaseous product of the reaction, if all volumes are measured under the same conditions of temperature and pressure.

Avogadro's Law

Equal volumes of gasses, under the same conditions of temperature and pressure, contain equal numbers of molecules.

Mole

A mole of any substance is defined as the amount of substance that contains as many particles (atoms or molecules or ions) as there are atoms of ^{12}C in 12 g of ^{12}C.

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