GLOSSARY OF USEFUL TERMS FOR F331

Atomic number: the number of protons in the nucleus of an atom

Mass number: the total number of protons and neutrons in the nucleus of an atom

Isotopes: atoms with the same atomic number but different mass numbers
or atoms with the same number of protons but different numbers of neutrons

Relative isotopic mass: the ratio of the mass of one atom of that isotope to $1/12^{th}$ of the mass of one atom of carbon-12

Relative atomic mass: the ratio of the average mass of an atom to $1/12^{th}$ of the mass of one atom of carbon-12

Relative molecular mass: the ratio of the average mass of a molecule (or formula unit) to $1/12^{th}$ of the mass of carbon-12

First ionisation energy: the heat energy required to remove one electron from each of a mole of free gaseous atoms of that element

Second ionisation energy: the heat energy required to remove one electron from each of a mole of free gaseous unipositive ions of that element

Avogadro's number: the number of elementary particles that there are in 12.000 grams of carbon-12

Mole: the amount of a substance containing the same number of elementary particles as there are in 12.000 grams of carbon-12

Molar mass: the mass of a substance containing the same number of elementary particles as there are in 12.000 grams of carbon-12

Empirical formula: the simplest whole number ratio in which the atoms of each element in a compound are found

Molecular formula: the number of atoms of each element in one molecule of the substance

Ionic bond: an attraction between oppositely charged ions

Covalent bond: a pair of electrons shared between two atoms

Dative covalent bond: a pair of electrons shared between two atoms, one of which provides both of the electrons

Metallic bond: an attraction between a cation and a sea of delocalised electrons

Electronegativity: the ability of an atom to attract electrons towards itself in a covalent bond.

Polar bond: the existence of partial positive and negative charges on each end of the bond as a result of the unequal sharing of electrons

s-block element: an element with s-electrons only in its outer shell

p-block element: an element with p-electrons in its outer shell

d-block element: an element with s and d-electrons but no p-electrons in its outer shell

Homologous Series: series of compounds with the same functional group in which the molecular formula varies by $-CH_2-$ from one member to the next

Isomerism: a number of different structures having the same molecular formula

Structural Isomerism: the same molecular formula, but a different arrangement of covalent bonds

Chain Isomerism: the same molecular formula, but a different arrangement of carbon atoms in the chain

Positional Isomerism: the same molecular formula, but the functional group in a different position

Functional Isomerism: the same molecular formula, but a different functional group

Functional group: an atom or group of atoms which confer specific physical and chemical properties to the molecule