

Term	Unit/Section	Topic	Modules
1	Fundamentals in Chemistry	<i>Atomic Structure and the Periodic Table</i>	Atomic theories Structure of the atom Isotopes and Radioactivity Energy level and Emission Spectrum Atomic orbitals Electronic configurations Ionisation Energies
1		<i>Forces of Attraction</i>	Ionic Bonding and its compounds Covalent Bonding and its compounds Co-ordinate Bonding Metallic Bonding and its compounds Intermolecular Forces of Attraction Lattice structures Shapes of Molecules
1		<i>The Mole Concept</i>	Chemical Equations Moles Empirical and Molecular Formulae Avogadro's Law Titrimetric Analyses Molar and Mass Concentrations
1		<i>Redox Reactions</i>	Oxidation and reduction Redox reactions Balancing Half equations Oxidising and reducing agents
1		<i>Kinetic Theory</i>	Gas laws Real and ideal gases Ideal gas equation Changing state

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1	Fundamentals in Chemistry	<i>Energetics</i>	Endothermic and exothermic reactions Energy profile diagrams Bond energies Enthalpy changes Hess' law of constant heat summation Enthalpy cycles Born-Haber cycles
1	Kinetics and Equilibria	<i>Rates of Reaction</i>	Methods of following the rate of a reaction Collision theory and rate of a reaction Factors affecting rate of reactions Calculating the rate of a reaction Rate Equations Deducing order of reactions using experimental data Reaction Mechanisms
1		<i>Principles of Chemical Equilibrium</i>	Dynamic equilibrium Equilibrium constants Calculations involving equilibrium constants Le Chatelier's Principle
1		<i>Acid/Base Equilibria</i>	Bronsted-Lowry theory of acids and bases Acid and base dissociation constants pH calculations Acid-base titrations and indicators
1		<i>Buffers and pH</i>	Buffer solutions pH of buffer solutions Buffers in biological systems and industrial processes
	<i>End of term Examinations</i>		

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2	Kinetics and Equilibria	<i>Solubility Product</i>	Principles underlying solubility product Common ion effect Selective precipitation
2		<i>Redox Equilibria</i>	Standard Electrode Potentials Standard Cell potentials Cell diagrams Redox reactions Electrode potential values and chemical reactions and changes Storage devices
2	Chemistry of the Elements	<i>Identification of Cations and Anions</i>	Flame tests Identifying cations Identifying anions
2		<i>Period sodium to argon</i>	Physical properties of period 3 elements Patterns in period 3 elements Reactions of period 3 elements Properties of period 3 oxides Reactions of period 3 oxides Properties of period 3 chlorides reactions of period 3 chlorides Acid-base behaviour of period 3 oxides and hydroxides
2		<i>Group II Elements</i>	Physical Properties of group 2 elements Reactions of group 2 elements Solubility of Group 2 sulphates Thermal decomposition of group 2 carbonates and nitrates Uses of compounds of magnesium and calcium

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2	Chemistry of the Elements	<i>Group IV Elements</i>	Physical Properties of Group 4 elements Bonding of tetrachlorides Reactions of the tetrachlorides Group 4 oxides of oxidation states II and IV Ceramics
2		<i>Group VII Elements</i>	Physical Properties of Group 7 elements Oxidising abilities of Group 7 elements Reactions of Group 7 elements and halide ions Stability of Group 7 Hydrides Reactions of chlorine with NaOH
2	<i>Pre-CAPE Examinations</i>	<i>First Row Transition Elements</i>	Characteristics of transition elements Electronic configuration of first row transition elements Properties of transition metals Redox reactions of transition elements Ligand exchange reactions