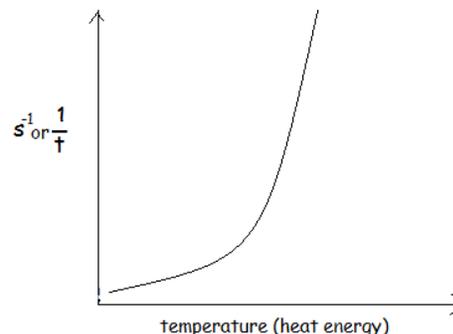
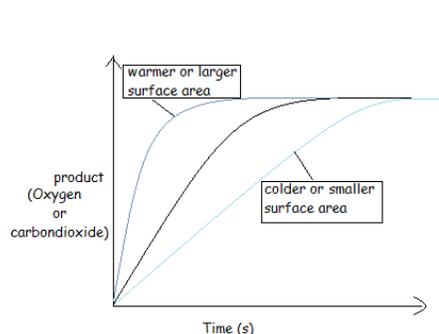


SECTION B \*\*\*\*\*2018 suggestions only\*\*\*\*\*

			Q4 50 marks	Q5 50 marks	Q6 50 marks	Q7 50 marks	Q8 50 marks	Q9 50 marks	Q10 50 marks 3 parts do 2	Q11 50 marks 3 parts do 2
<p><b>Titration Practical</b></p> <p>EDTA/buffer pH 10 Soap lather and scum</p> <p>% Hypochlorite in bleach (dilution factor)</p> <p>How successive titrations allow us to produce standard solutions from primary standards</p>	<p><b>Organic</b></p> <p>Clove oil Steam distillation <b>solvent extracton</b></p> <p><b>Soap</b> (base hydrolysis of an ester)</p>	<p><b>Rates/ Others</b></p> <p>Heat of reaction of HCl with NaOH (E=mcθ)</p> <p><b>Anion and flame tests</b></p> <p><b>Chromatography (it might appear in section B)</b></p>	<p><b>Shorties 2 free marks</b></p> <p><b>An alpha particle is a helium nucleus</b></p> <p>Isotopes of Oxygen</p> <p>James Chadwick</p> <p>Louis de Broglie</p> <p><b>John Dalton</b></p> <p>Electronic configuration of an <i>ion eg O<sup>2-</sup></i> and the two exceptions Cu and Cr</p> <p>Intramolecular forces</p> <p>reaction between ethanol and Na<sub>2</sub>CO<sub>3</sub> or metals</p> <p><b>% w/v</b></p> <p><b>Deionised water vs distilled</b></p> <p>Bomb calorimeter</p> <p>Harmful and corrosive symbols-oxidising vs flammable</p>	<p><b>Periodic table &amp; Atomic structure</b></p> <p>polarity of water and solubility</p> <p>lewis dot structures (N<sub>2</sub>)</p> <p>shapes of molecules</p> <p>Pi and sigma bonds</p> <p><b>Moseley helped clarify the periodic table by increasing atomic number whereas before it was increasing atomic mass</b></p> <p><b>Newlands Dobereiner</b></p> <p>Electronic configuration</p> <p><b>BONDING and electronegativity</b></p> <p><b>Electron transitions for Balmer, Paschen and Lyman</b></p>	<p><b>Organic</b></p> <p>Hydrocarbons <b>Mercaptans LPG *****</b> cyclohexane and Benzene aromatic</p> <p><b>structural isomers</b></p> <p><b>Octane number</b> Tetrahedral and planar carbon= geometry</p> <p><b>Homologous series</b></p> <p>Aliphatic <b>**ESTERS**</b></p>	<p><b>Any other</b></p> <p>HALOGENS as good oxidising agents redox reactions</p> <p>WATER <b>Treatment of Water</b> /flooding results in unsafe water contamination/ algal blooms <b>free Chlorine</b>(HOCl) colorimetry CO<sub>2</sub> not responsible for acid rain !!!</p> <p><b>acids, bases and Conjugate pairs and pH calculations with water dilutions... how does pH vary? RANGE OF INDICATORS never titrate weak acids with weak bases as endpoint is too narrow</b></p> <p><b>Rates of reaction</b> - graph of how a reaction might change with change in particle size or temperature. Energy profile diagram to explain and include catalyst Catalytic converter</p> <p><b>Radioactivity/ principle of the mass spectrometer and decay calculation HALF LIFE</b></p> <p>State Le Chatelier's principle with Equilibrium experiment</p>	<p>Stoichiometry</p> <p>Avogadro, Gay Lussac and the mole <b>**IDEAL GAS**</b></p> <p><b>Electrolysis of aqueous solutions using inert electrodes</b> <b>oxidation reduction/ oxidizing and reducing agents/ oxidation numbers to balance. H<sub>2</sub>O<sub>2</sub></b></p> <p>Catalysts mechanisms heterogeneous and homogeneous Catalyst</p> <p>Molecular formula/ empirical and structural formulas of e.g. Benzene</p> <p>Q11(c) <b>Acid rain causes and effects + equations</b> <b>Premier periclast</b> <b>Batch process vs continuous</b></p> <p><b>GREENHOUSE GAS CONTRIBUTION and effect</b></p> <p><b>NITROGEN CYCLE</b></p>			

... excess KI solution (excess because it provides sufficient iodide ions for all the  $\text{ClO}^-$  ions to displace and it also because  $\text{I}_2$  isn't very polar)

- $\text{H}_2\text{SO}_4$  is **DIPROTIC** and it is a **Strong** acid which means that it can **produce 2  $\text{H}^+$**  ions and it is a **good donor** of protons( $\text{H}^+$ )
- How successive titrations allow us to produce standard solutions from primary standards... firstly we titrated HCl against the primary standard  $\text{Na}_2\text{CO}_3$  to find the conc of HCl. Then we used that HCl to titrate against NaOH to find the conc of NaOH.
- Electronegativity and bonding ...like dissolves like ....a non-polar substance will not dissolve in a polar solvent. *Water will always be deflected by any charged rod because it had a dipole moment i.e. the centre of positive + charge does not coincide with the centre of negative- charge.* This is also the reason why Hydrogen bonding (intermolecular forces) occurs between the water molecules resulting in the unusually high melting and boiling points of water.
- Cyclohexane to benzene by dehydrocyclisation



- Know the graph changes in rates of reaction
- Boiling points .... The longer the Hydrocarbon chain, the larger the  $M_r$ , the stronger the Van der Waal forces the higher the boiling points.
- The reason for the large deflections of the alpha particles in the gold leaf experiment was because Gold atoms have 79 protons densely positioned within it's nucleus.
- Test for the Hydrogen Carbonate ion.
- FOR Q 11(C) Note the following

GREENHOUSE GASES IN THE STRATOSPHERE			
INCREASING GREENHOUSE FACTORS			
			
water vapour	carbon dioxide	methane	typical CFC
LARGEST CONTRIBUTOR... more of it in the atmosphere			SMALLEST CONTRIBUTOR ...less of it in the Troposphere