

Unit 7: Organic chemistry		
1.	Alkene general formula	C_nH_{2n}
2.	unsaturated	contains a double bond
3.	Functional group	C=C
4.	First 4 alkenes	ethene, propene, butene and pentene
5.	Alcohol functional group	-OH
6.	First 4 alcohols	methanol, ethanol, propanol and butanol
7.	Alcohol production	When sugar solutions are fermented using yeast
8.	Carboxylic acid functional group	-COOH
9.	First 4 carboxylic acids	methanoic acid, ethanoic acid, propanoic acid and butanoic acid
10.	Addition polymerisation	monomers join to form polymers
11.	Condensation polymerisation	reactions of monomers with two functional groups small molecules such as water is often a product
12.	Amino acids	have two different functional groups
13.	Amino acid reactions	react by condensation polymerisation to produce polypeptides
14.	Examples of naturally occurring polymers	DNA, proteins, starch and cellulose
15.	DNA Structure	two polymer chains, made from four nucleotides, in a double helix

Unit 8: Chemical analysis																
16	Cation	Positively charged ion														
17	Anion	Negatively charged ion														
18	Flame tests	used to identify some metal cations														
19	Flame test colours	<table border="1"> <thead> <tr> <th>Cation</th> <th>Colour</th> </tr> </thead> <tbody> <tr> <td>Lithium</td> <td>Crimson</td> </tr> <tr> <td>Sodium</td> <td>Yellow</td> </tr> <tr> <td>Potassium</td> <td>Lilac</td> </tr> <tr> <td>Calcium</td> <td>Orange – red</td> </tr> <tr> <td>Copper</td> <td>Green</td> </tr> </tbody> </table>	Cation	Colour	Lithium	Crimson	Sodium	Yellow	Potassium	Lilac	Calcium	Orange – red	Copper	Green		
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20	Sodium hydroxide solution	Test for some metal cations														
21	Sodium hydroxide solution positive result	<table border="1"> <thead> <tr> <th>Cation</th> <th>Colour of precipitate</th> </tr> </thead> <tbody> <tr> <td>aluminium</td> <td>White (goes clear in excess)</td> </tr> <tr> <td>Calcium</td> <td>white</td> </tr> <tr> <td>Magnesium</td> <td>White</td> </tr> <tr> <td>Copper(II)</td> <td>blue</td> </tr> <tr> <td>Iron(II)</td> <td>green</td> </tr> <tr> <td>Iron (III)</td> <td>Brown</td> </tr> </tbody> </table>	Cation	Colour of precipitate	aluminium	White (goes clear in excess)	Calcium	white	Magnesium	White	Copper(II)	blue	Iron(II)	green	Iron (III)	Brown
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22	Testing for carbonates	<p>a. react with dilute acids and bubble through limewater</p> <p>b. cloudy result shows that carbon dioxide is present and that the compound contains a carbonate.</p>														
23	Silver nitrate and nitric acid	Tests for Halide ions Silver chloride is white, silver bromide is cream and silver iodide is yellow														
24	Halide positive results	<table border="1"> <thead> <tr> <th>Halide</th> <th>Colour</th> </tr> </thead> <tbody> <tr> <td>Chlorine</td> <td>white</td> </tr> <tr> <td>Bromine</td> <td>Cream</td> </tr> <tr> <td>Iodine</td> <td>Yellow</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Halide	Colour	Chlorine	white	Bromine	Cream	Iodine	Yellow						
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25	Testing for sulphates	in solution produce a white precipitate with barium chloride solution in the presence of dilute hydrochloric acid.
26	instrumental methods	Using machines for chemical analysis
27	Advantages of instrumental methods	accurate, sensitive and rapid
28	Flame emission spectroscopy	used to analyse metal ions in solutions

Unit 10: Using resources		
29	Corrosion	destruction of materials by chemical reactions with substances in the environment
30	Rust	an example of corrosion that happens in iron, oxygen and water are necessary
31	Corrosion prevention	a. barrier - greasing, painting, or electroplating, oxide coating b. sacrificial protection, using a more reactive element
32	Alloys	a mixture of two or more elements, where at least one element is a metal
33	soda-lime glass	made by heating a mixture of sand, sodium carbonate and limestone
34	Borosilicate glass	made from sand and boron trioxide, melts at higher temperatures than soda-lime glass
35	Clay ceramics	are made by shaping wet clay and then heating in a furnace
36	Thermosoftening polymers	melt when they are heated.
37	Thermosetting polymers	do not melt when they are heated
38	Polymers of ethene	low density (LD) and high density (HD) poly(ethene)
39	Composite	made of two materials, a matrix or binder surrounding and binding together with reinforcement.
40	Haber process	used to manufacture ammonia
41	Haber process reaction	nitrogen + hydrogen \rightleftharpoons ammonia
42	NPK fertilisers	fertilisers containing nitrogen, phosphorus and potassium