

Reactivity of Metals		
1.	Metal + oxygen →	metal oxide
2.	Metal + water →	metal hydroxide + hydrogen
3.	Metal + acid →	salt + hydrogen
4.	Oxidation	gain of oxygen
5.	Reduction	loss of oxygen
6.	Order of Reactivity of metals	potassium, sodium, lithium, calcium, magnesium, zinc, iron, copper
7.	Displacement reaction	a more reactive element takes the place of a less reactive element

Reactions of metals with Water		
8.	Potassium with water	melts into a ball, fizzes and burns with a lilac flame
9.	Sodium with water	melts into a ball and fizzes
10.	Lithium with water	fizzes
11.	Copper with water	no reaction

Oxidation and Reduction (HT only)		
12.	Oxidation	loss of electrons
13.	Reduction	gain of electrons
14.	Redox Reaction	reaction involving loss or gain of electrons
15.	Half Equation	shows how electrons are lost or gained

Neutralisation Reactions		
16.	Alkali	a soluble base
17.	Acid + Alkali →	salt + water
18.	Acid + Metal oxide →	salt + water
19.	Acid + Metal hydroxide →	salt + water
20.	Acid + Metal Carbonate →	salt + water + carbon dioxide
21.	Reactions with hydrochloric acid	produce chlorides
22.	Reactions with sulfuric acid	produce sulfates
23.	Reactions with nitric acid	produce nitrates

RP: How to make a salt	
24. Process of making a salt	i) choose correct acid and insoluble base ii) add the solid to the acid until no more dissolves iii) filter the excess iv) crystallise

The pH Scale & Neutralisation		
25.	Acidic solutions	contain H ⁺ ions
27.	Alkaline solutions	contain OH ⁻ ions
28.	pH Scale	measures acidity or alkalinity of solutions
29.	Acidic pH	lower than 7
30.	Alkaline pH	higher than 7
31.	Neutral pH	7
32.	Universal Indicator	used to measure pH
33.	pH probe	used to measure pH
34.	Ions in neutralisation reactions	H ⁺ + OH ⁻ → H ₂ O

Strong and Weak acids (HT only)		
35.	Strong acid examples	hydrochloric, sulfuric, nitric
36.	Weak acid examples	ethanoic, citric, carbonic
37.	Link between pH and concentration	as pH decreases by 1, concentration of H ⁺ ions increases by a factor of 10
38.	Strong acids in solution	are completely ionised
39.	Weak acids in solution	are partially ionised

Electrolysis		
40.	Electrolysis	splitting up a substance using electricity
41.	Electrolyte	a melted or dissolved ionic substance
42.	Electrode	charged terminals in electrolysis (usually made of carbon)
43.	Cathode	negative Electrode
44.	Anode	positive Electrode
45.	PANIC	P ositive A node N egative i s C athode
46.	At the cathode	metal ions (positively charged) gain electrons to become metal atoms
47.	At the anode	non-metal ions (negatively charged) lose electrons to become non-metal atoms
48.	Discharging	ions turning into atoms at electrodes

Electrolysis for metal extraction		
49.	When electrolysis is used	if the metal is more reactive than carbon
50.	Problem of electrolysis	lots of energy is required
51.	Aluminium extraction process	aluminium oxide is dissolved in cryolite before electrolysis is done.
52.	Cryolite	aluminium oxide dissolves in this to lower the melting point so less energy is needed.

RP: Electrolysis of Aqueous Solutions		
53.	At the cathode	hydrogen will be discharged unless there is silver or copper
54.	At the anode	oxygen will be discharged unless there is a halogen
55.	Halogen	group 7 element (Chlorine, Bromine, Iodine)