1.What is formed when metals react with oxygen?	Metal oxides
2. In terms of oxygen what are oxidation and reduction?	Oxidation is gain of oxygen Reduction is loss of oxygen
3. What is produced when most metals react with an acid?	Metal + Acid → Salt + Hydrogen
4. In terms of metals, what is a displacement reaction?	A more reactive metal will displace a less reactive metal from its aquous solution.
5. Why are some metals more reactive than others?	More reactive metals have a greater tendency to form positive ions than less reactive metals.
6. In terms of electrons what are oxidation and reduction?	Oxidation is loss of electrons. Reductions is gain of electrons.
7. How are less reactive metals found in nature?	In their native state (not as compounds)
8. How can metals less reactive than carbon be extracted from their ores (oxides)	Reduction with carbon at high temperature.
9. How are more reactive metals extracted from their ores?	By electrolysis.
10. During the reaction of a metal with an acid, what happens to the metal atoms and the hydrogen ions?	1) The metal atoms lose electrons (oxidised) to become metal ions. 2) The hydrogen ions gain electrons (reduced) to become hydrogen atoms.
11. What are bases and alkalis?	Bases are compounds which can neutralise an acid Alkalis are bases which are soluble in water.
12. Metal oxides and metal carbonates are what type of substances	Bases
13. What is the general equation for neutralisation?	Acid + Base → Salt + Water
14. Which salts are produced by neutralisation of the following acids? 1) Hydrochloric acid 2) Sulfuric acid 3) Nitric acid	1) Chlorides 2) Sulfates 3) Nitrates
15. How can we make a clean dry salt from an insoluble base?	1) Add excess base to warmed acid. 2) Filter off the excess base. 3) Place solution in an evaporating basin. 4) Heat over a water bath until crytals start to form. 5) Leave for the water to fully evaporate.
16. How can we make a clean dry salt by reacting an acid with an alkali?	By titration
17. What are the steps in titration to produce a clean dry salt?	1) Measure 25cm^3 of alkali using a pipette into a conical flask.

	2) Add a few drops of indicator (phenolphthalein is pink) 3) Slowly add the acid from a burette swirling as you do. 4) When the indicator changes (phenolphthalein goes colourless) stop adding the acid and record the volume used. 5) Repeat until concordant results are obtained. 6) Repeat again without indicator, adding the exact volume of acid required. 7) Evaporate off the water from the solution to leave the salt.
18. What is the general equation for the reaction of a metal carbonate with an acid?	Metal carbonate + Acid → Salt + water + carbon dioxide
19.What is an acid?	Produce H^+ ions in aqueous solution. Have a pH of less than 7
20. What is an alkali?	Produce OH^- ions in aqueous solution. Have a pH of more than 7
21. What is the ionic equation for neutralisation?	$H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$
22. What is the difference between a strong acid and a weak acid?	Strong acids completely ionise in aqueous solution. Weak acids only partially ionise in aqueous solution
23. As the pH decreases by 1, what happens to the concentration of H^+ ions?	The concentration of H^+ ions increases by a factor of 10.
24. What is electrolysis?	Breaking down a substance using direct current.
25. What is an electrolyte?	A molten or dissolved ionic compound which is to be electrolysed.
26. What are the electrodes called?	Positive = anode Negative = cathode
27. During electrolysis what happens?	Negative ions move to the anode (+) where they lose electrons (oxidation) Positive ions move to the cathode (-) where they gain electrons (reduction)
28. In the electrolysis of a molten compound, what is formed at the Anode and Cathode?	At the anode (+) = non metal At the cathode (-) = metal
29. During the electrolysis of an aqueous solution, what is formed at the anode and cathode?	At the anode (+) = oxygen OR a halide At the cathode (-) = Metal or hydrogen (if the metal is more reactive than hydrogen)
30. What are the steps in the electrolysis of aluminium oxide?	1) The bauxite ore is purified to get the aluminium oxide.

	2) The aluminium oxide is dissolved in molten cryolite. 3) The mixture is electrolysed and aluminium forms at the cathode (-)
31. Why is cryolite used?	It reduces the melting point of the aluminium oxide saving energy.
32. What happens to the carbon anode?	It reacts with the oxygen produced to form carbon dioxide and eventually burns away.
33. Why is aluminium extraction expensive?	It requires a great deal of energy to melt the aluminium oxide and a lot of electrical current.