Definitions and Concepts for Edexcel Chemistry GCSE

Topic 3 - Chemical Changes

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*Definitions in **bold** are for higher tier only*

Definitions marked by '' are for separate sciences only*

Definitions have been taken, or modified from the Edexcel Specification for GCSE Chemistry, 1CH0, Issue 3, February 2018

Acid: Produces hydrogen ions (H+) in aqueous solutions with a pH range between 0 and 7.

Alkali: Produces hydroxide ions (OH-) in aqueous solutions with a pH range between 7 and 14.

Anode: The positive electrode. It is where negatively charged ions lose electrons in oxidation reactions. It is the electrode where oxygen is produced unless the solution contains halide ions - then the halogen is produced.

Base: A substance which reacts with an acid in a neutralisation reaction to form a salt and water only.

Cathode: The negative electrode. It is where positively charged ions gain electrons in reduction reactions. It is the electrode where hydrogen is produced if the metal in the electrolyte is more reactive than hydrogen.

Electrode: A solid conductive material through which electricity can flow. They are used in electrolysis to conduct electricity.

Electrolysis: The splitting up of an ionic compound using electricity. The electric current is passed through a substance causing chemical reactions at the electrodes which lead to the decomposition of the materials.

Electrolyte: A solution containing free ions from the molten or aqueous ionic substance. The ions are free to move to carry charge.

Indicators: A chemical used in a titration reaction to identify the end point of the reaction by a clear colour change. Examples include phenolphthalein and methyl orange.

Neutralisation: The reaction in which an acid and a base react to form a salt and water.

Oxidation: A reaction involving the gain of oxygen. **Oxidation is the loss of electrons.**

pH scale: A measure of the acidity or alkalinity of a solution. The scale ranges from 0-14 and can be measured using universal indicator or a pH probe.

Reduction: A reaction involving the loss of oxygen. **Reduction is the gain of electrons.**

Strong acid: An acid which is completely ionised in an aqueous solution so that nearly all the H^+ ions are released. Examples of strong acids include hydrochloric, nitric and sulfuric acids.

Titration: A technique used where a solution of known concentration is used to determine the concentration of an unknown solution.

Universal indicator: A mixture of dyes that changes colour gradually over a range of pH and is used in testing for acids and alkalis.

Weak acid: An acid which is only partially ionised in an aqueous solution. This means only a small number of the H^+ ions are released. Examples of weak acids include ethanoic, citric and carbonic acids.