GCE 'O' Level Chemistry
List of Definitions

CHAPTER 1 – KINETIC PARTICLE THEORY

1. **Evaporation** – the process by which a liquid changes to a gas at temperature lower than its boiling point.
2. **Sublimation**[1] - the process by which a solid changes directly to a gas without going through the liquid state.

CHAPTER 3 – SEPARATION AND PURIFICATION

Just need to know the definition of a pure substance. The definitions of the methods of separation and purification are unlikely to be tested.

1. **Pure Substance** – a substance made up of one single element or compound. It is not mixed with any other substance.
2. **Filtration** – a method used to separate insoluble solid particles from a liquid.
3. **Evaporation to Dryness** – a method used to obtain a soluble solid from a solution by heating the solution until all the water has boiled off.
4. **Crystallisation** – a method used for obtaining a pure solid sample from its solution.
5. **Simple Distillation** – a method used to separate a pure solvent from a solution.
6. **Separating Funnel** – a method used to separate immiscible liquids.
7. **Fractional Distillation** – a method used to separate a mixture of miscible liquids with different boiling points.
8. **Chromatography** – a method of separating two or more components that dissolve in the some solvent.

CHAPTER 4 – ELEMENTS, COMPOUNDS AND MIXTURES

1. **Element** – a pure substance that cannot be broken down into two or more simpler substances by chemical processes.
2. **Compound** – a pure substance containing two or more elements that are chemically combined in a fixed ratio.
3. **Mixture** – a substance made up of two or more substances that are not chemically combined.

CHAPTER 5 – ATOMIC STRUCTURE

1. **Proton Number/Atomic Number** – the number of protons in the atom.
2. **Nucleon Number/Mass Number** – the total number of protons and neutrons in the atom.
3. **Isotopes** – atoms of the same element with the same number of protons but different number of neutrons.

CHAPTER 11 – ACIDS AND BASES

1. **Acid** – a substance that produces hydrogen ions, H^+, in aqueous solution.
2. **Base** – a metal oxide/hydroxide that reacts with an acid to produce a salt and water only.
3. **Alkali** – a substance that produces hydroxide ions, OH^-, in aqueous solution.
4. **Strong Acid** – an acid that is completely ionised in aqueous solution.
5. **Weak Acid** – an acid that is partially ionised in aqueous solution.

CHAPTER 13 – OXIDATION AND REDUCTION

1. **Oxidation** – gain of oxygen/loss of hydrogen/loss of electrons/increase in oxidation state.
2. **Reduction** – loss of oxygen/gain of hydrogen/gain of electrons/decrease in oxidation state.
3. **Oxidising Agent** – a substance that causes another substance to be oxidised.
4. **Reducing Agent** – a substance that causes another substance to be reduced.

CHAPTER 14 – METALS

1. **Alloy** – a mixture of a metal with one or a few other elements.
2. **Steel** – an alloy of iron with carbon and/or other metals.

CHAPTER 15 – ELECTROLYSIS

1. **Electroplating** – the process of depositing a layer of metal on another substance using electrolysis.
2. **Simple Cell** – a device that converts chemical potential energy into electrical energy.

CHAPTER 17 – ENERGY CHANGES

1. **Exothermic Change** – heat is given out to the surroundings.
2. **Endothermic Change** – heat is taken in from the surroundings.
3. **Enthalpy Change** – the difference in energy content of the reactants and products.
4. **Activation Energy** – the minimum energy that reactant particles must possess in order for a chemical reaction to occur.

CHAPTER 18 – SPEED OF REACTION

1. **Catalyst** – a substance which increases the speed of a chemical reaction and remains chemically unchanged at the end of the reaction.

CHAPTER 19 – AMMONIA

1. **Reversible Reaction** – a reaction which can go both forward and backward at the same time.

Optimal conditions for the Haber Process – pressure of **250atm**, a temperature of **450°C** and the addition of **iron catalyst**.

CHAPTER 20 – THE ATMOSPHERE AND ENVIRONMENT

1. **Chlorofluorocarbon** – a compound containing carbon, fluorine and chlorine.
2. **Carbon Cycle** – the mechanism that maintains the level of carbon dioxide in the atmosphere.
3. **Global Warming** – the increase in the Earth's average temperature due to the build-up of greenhouse gases in the atmosphere.

CHAPTER 21 – AN INTRODUCTION TO ORGANIC CHEMISTRY

1. **Homologous Series** – a family of organic compounds with the same functional group and similar chemical properties.
2. **Functional Group** – an atom or group of atoms that gives a molecule its characteristic properties.
3. **Petroleum** – a naturally occurring mixture of hydrocarbons.

CHAPTER 22 – ALKANES AND ALKENES

1. **Isomers** – compounds that have the same molecular formula but different structural formula.

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[1] Knowledge regarding deposition is not required.