Combination reactions (Level 1) exam tips

**•** When heated, two reactants (usually a solid and a gas) combine together to form a single product

(usually a solid).

*metal + oxygen 🡪 metal oxide eg magnesium + oxygen gas 🡪 magnesium oxide*

*metal + non-metal 🡪 ionic compound eg iron + sulfur 🡪 iron sulfide*

*gas + gas 🡪 covalent substance eg hydrogen gas + oxygen gas 🡪 water*

 Be sure to describe the formation of ions in detail, using a phrase such as "atoms achieve a STABLE,

FULL outer shell, by losing or gaining electrons, or sharing electrons".

To achieve with Merit

You must explain the electron transfer between metals and non-metals in the formation of an ionic compound

or

the sharing of electrons between non-metals in the formation of a covalent molecule (with weak attractions between the molecules)

To achieve with Excellence

You must state that "there is an electrostatic attraction between oppositely charged ions

eg (the cation Fe2+) and (the anion S2-)

Also…”don’t be daft”

A combination reaction is the joining of different ELEMENTS, not substances or compounds

Please don't use ANTHROPOMORPHIC language, atoms are never "happy" with full outer shells or "wishing" to give away electrons

The properties of an ionic compound are not, repeat NOT a mixture of the properties of the metal and non-metal from which it is made

The symbol for a chlorine atom has a CAPITAL C and a lower case l, lower, lower case, little l

PLUMBUM is the Latin word for lead, which has the symbol Pb

and Fe is the symbol for IRON from the Latin word Ferrum

Copper does not, never has and NEVER WILL rust

No sulfur is NOT a gas, sulfur is a yellow powder

If unsure about conditions for a reaction to occur, HEAT is usually a good bet

The NEW substance formed will have DIFFERENT properties to the reactants used

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