Name : _____ ( ) Class: _____ Date : _____

1. **Oxidation**
   Oxidation is defined as
   (a) the **addition** of oxygen to a substance.
   (b) the **removal** of hydrogen from a substance.
   (c) the process of electron **loss** from a substance.
   (d) an **increase** in the **oxidation** state of a substance.
   A substance is **oxidised** if it gains oxygen, loses hydrogen, or loses electrons after a reaction.

2. **Reduction**
   Reduction is defined as
   (a) the **removal** of oxygen from a substance.
   (b) the **addition** of hydrogen to a substance.
   (c) the process of electron **gain** in a substance.
   (d) a **decrease** in the **oxidation** state of a substance.
   A substance is **reduced** if it loses oxygen, gains hydrogen, or gains electrons after a reaction.

3. **Oxidising Agent**
   A substance that gives **oxygen** to another substance is called an **oxidising** agent.
   A substance that takes **hydrogen** from another substance is called an oxidising agent.
   A substance that takes **electrons** from another substance is called an oxidising agent.

4. **Reducing Agent**
   A substance that takes **oxygen** from another substance is called a **reducing** agent.
   A substance that gives **hydrogen** to another substance is called a reducing agent.
   A substance that gives **electrons** to another substance is called a reducing agent.

5. Magnesium is a **stronger** reducing agent than zinc because it is **higher** than zinc in the **reactivity** series. It is able to **lose electrons more easily** than zinc, and it is able to act as a **reducing agent**.

6. Reactivity Series : Potassium, sodium, calcium, **magnesium**, aluminium, **zinc**, **iron**, lead, hydrogen, **copper**, silver, gold.

7. To test for Reducing agent, use an **oxidising** agent.
   In the presence of a reducing agent,
   (a) potassium manganate (VII) turns from **purple** to **colourless**
   (b) potassium dichromate (VI) turns from **orange** to **green**
   (c) **yellowish** **brown** iron (III) chloride turn to **green** iron (II) chloride

8. To test for Oxidising agent, use a **reducing** agent.
   In the presence of an oxidising agent,
   (a) **colourless** potassium iodide to **brown** iodine. If added with starch solution, a **dark** **blue** colour will be produced (starch is used to test for iodine)
   (b) the colour of moist starch iodide paper turns from **white** to **blue**. This is because the iodine produced reacts with the starch to give a blue colour.
   (c) **green** iron (II) chloride turn to **yellowish** **brown** iron (III) chloride

9. A redox reaction is a reaction **where there is simultaneous oxidation & reduction**.
   In a redox reaction, the oxidising agent is itself **reduced** and the reducing agent is itself **oxidised**.
   In a redox reaction, there is a transfer of **oxygen**, **hydrogen** or **electron**.