

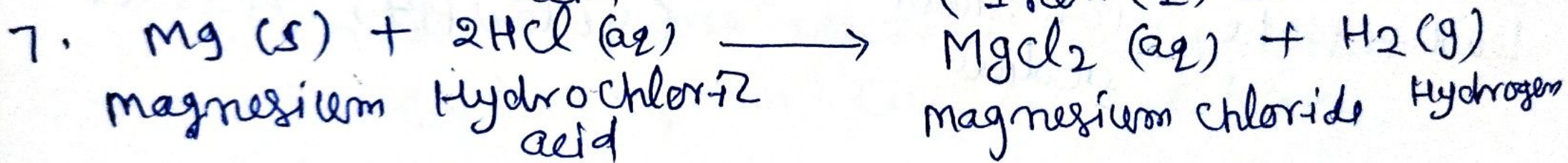
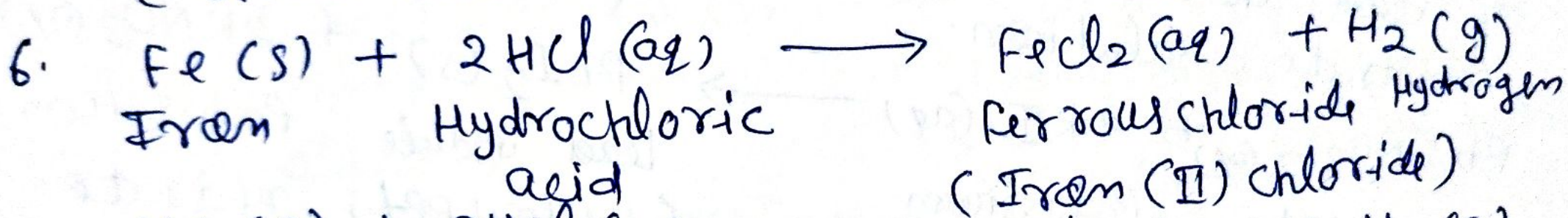
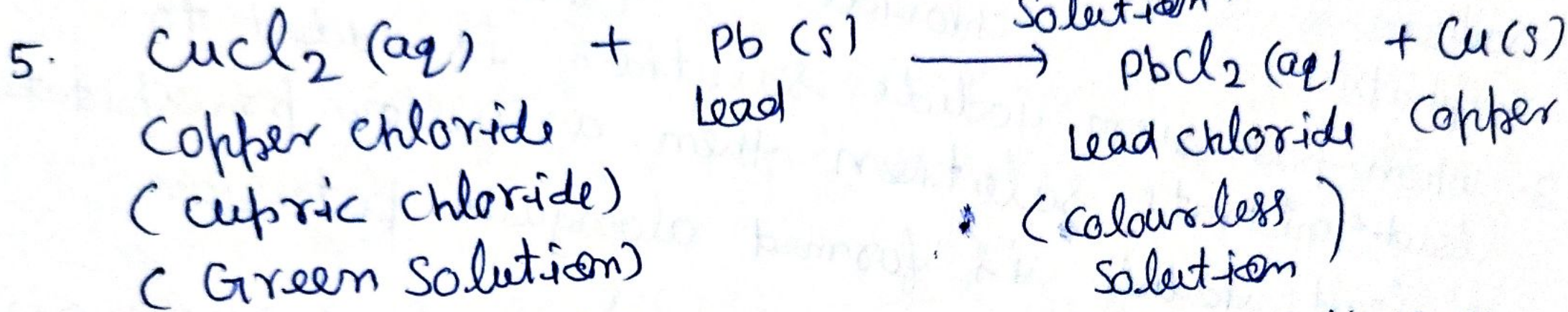
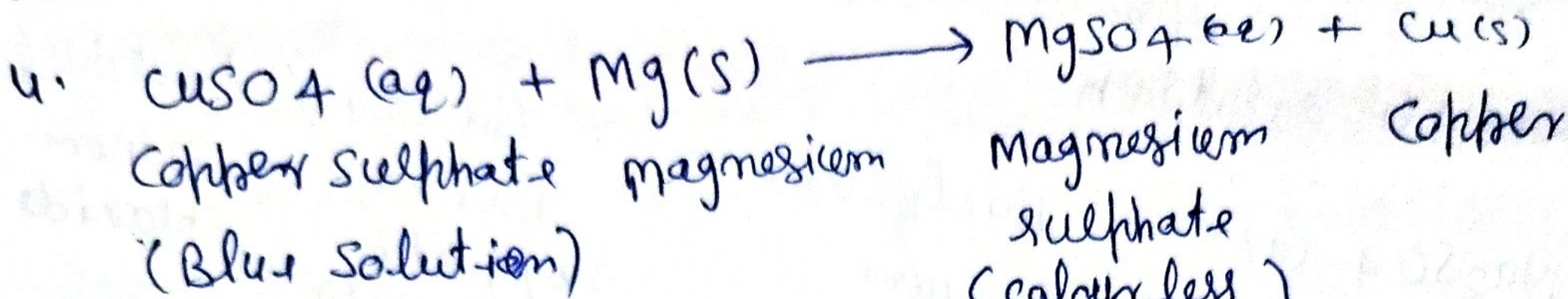
uses of decomposition reactions →

1. The decomposition reactions carried out by electricity are used to extract several metals from their natural compounds. e.g. This reaction is used to extract metals such as Na, Al etc.

Decomposition reaction in our Body → The digestion

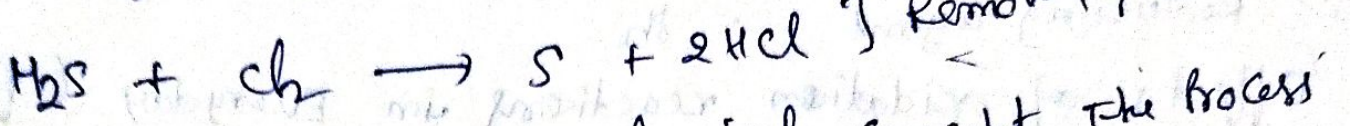
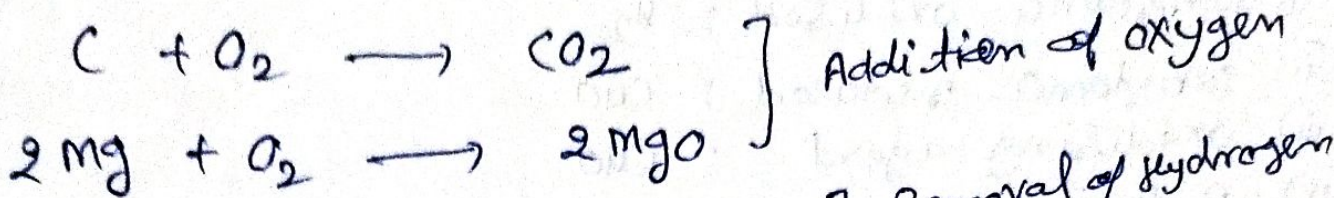
of food in the body is an example of decomposition reaction. When we eat foods like wheat, rice or potatoes then the starch present in them decomposes to give glucose in the body and the proteins decomposes to form amino acids.

Other examples of displacement reaction →

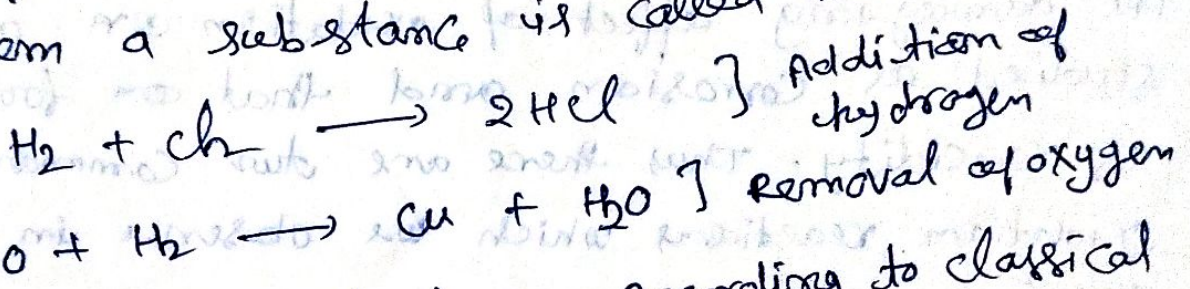


Oxidation

According to classical concept, the process of addition of oxygen to a substance or removal of hydrogen from a substance is called oxidation. e.g.



Reduction — According to classical concept, the process of addition of hydrogen or removal of oxygen from a substance is called reduction.

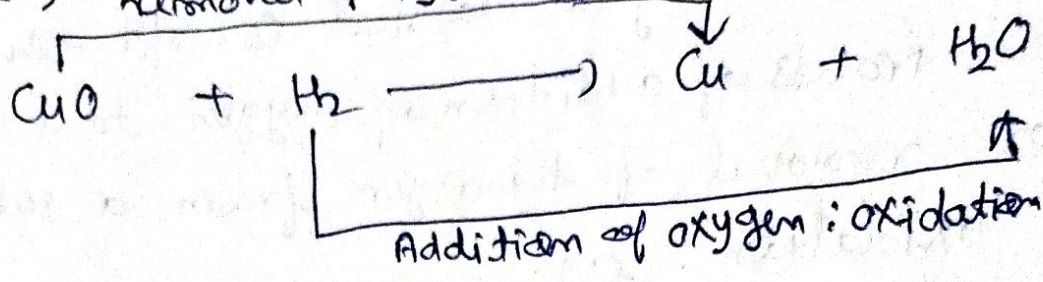


Oxidising agent or oxidant — According to classical concept, the substance which gives oxygen for oxidation or removes hydrogen is called oxidising agent.

Reducing agent or reductant — According to classical concept the substance which gives hydrogen for reduction or removes oxygen is called reducing agent or reductant.

Redox reaction → The reaction in which both oxidation and reduction reactions take place are called redox reaction.

e.g. removal of oxygen : Reduction



- (i) substance oxidised : H_2
- (ii) substance reduced : CuO
- (iii) oxidising agent : CuO
- (iv) Reducing agent : H_2

Effects of oxidation reactions in Everyday life →

has damaging effect on metals as well as on food. The damaging effect of oxidation on metals is studied as Corrosion and that on food is studied as rancidity. Thus there are two common effects of oxidation reactions which we observe in daily life are :

- (i) Corrosion of metals and
- (ii) Rancidity of food.

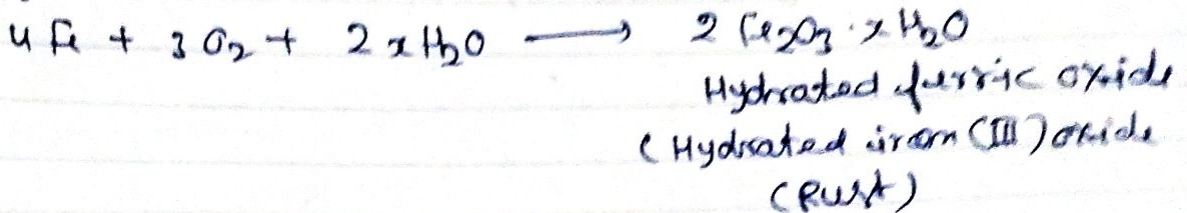
Corrosion — The process in which metals are eaten up gradually by the action of air, moisture or chemical such as acid on their surface is called Corrosion. e.g.

- (i) Shining of gold decreases
- (ii) Shining of silver metal diminishes
- (iii) Green layer deposited on Copper metal
- (iv) Brown layer deposited on iron metal

Rusting

Corrosion of iron metal is called rusting. Rusting is hydrated ferric oxide having formula $Fe_2O_3 \cdot x H_2O$.

during the rusting of iron, iron metal oxidised by oxygen of air in the presence of water (moisture) to form hydrated ferric oxide which is called rust.



methods of prevention of Rusting

1. Rusting of iron can be prevented by painting.
2. Rusting of iron can be prevented by applying oil or grease.
3. Rusting of iron can be prevented by galvanisation (i.e. covering the surface of iron by zinc metal)
4. Rusting of iron metal can be prevented by tin plating and chromium plating.

Rancidity — when the food materials prepared in oils and fats are kept for a long time, they start giving unpleasant smell and taste. This is called rancidity.

The condition produced by aerial oxidation of fats and oils in foods marked by unpleasant smell and taste is called rancidity.

Note — In this process oils and fats present in the food materials get oxidised by oxygen of air to form oxidation product having unpleasant smell and taste. Rancid means sour or stale.

methods of prevention of rancidity

1. Rancidity can be prevented by packing fat and oil containing foods in nitrogen gas.
2. Rancidity can be prevented by keeping food in a refrigerator.

3. Rancidity can be prevented by storing food in air tight containers.
4. Rancidity can be prevented by storing foods away from light.
5. Rancidity can also be prevented by adding anti-oxidants to the foods containing fats and oils. e.g. BHT (Butylated hydroxy toluene) and BHA (Butylated hydroxy anisole)