**Unit 8: Acids, Base and Salts**

**Properties and uses of acids, bases and salts**

**Acids**

Acid is a substance that transfers its hydrogen ion(H+) to another substance (i.e. base), depending on the type of acid (weak or strong) it can donate fewer or all its hydrogen ions.

**Properties**

* Have a ***sour*** taste.
* Tend to cause damage to metal, stone or other materials by chemical action(corrosion)
* Have a ***pH*** value ***< 7***
* Turns blueon litmus paper ***red***

**Uses**

* ***Sulfuric acid*** (most widely used) is used in the batteries of cars.
* ***Nitric acid*** is used in the manufacturing of *fertilizers, plastics and dyes.*

**Base**

A compound which has the ability to neutralize acid.

**Properties**

* Able to ***remove*** the sharp taste of an acid.
* Ability to ***neutralize*** acids.
* Have a ***soapy*** feel.
* Taste ***bitter, chalky.***
* ***pH*** level ***> 7***

**Uses**

* Used in the manufacturing of ***soap, detergents,*** etc.
* Bases are used in the ***petroleum industry*** to refine crude oil and remove impurities from fuel.

**Salts**

A salt is the product from a ***neutralization reaction*** between an acid and a base.

**Properties**

* Most are ***soluble*** in water.
* ***High*** melting and boiling point, due to **strong ionic bonds**between them.

**Uses**

* ***Calcium oxychloride*** used for the ***disinfection*** of drinking or swimming pool water.
* ***Sodium hydrogen carbonate*** (*baking soda)* is used for making baking powder.

**Importance of pH in everyday life**

* Our ***bodies*** work within a ***narrow range*** of 7.0 7.8
* Our stomach produce ***hydrochloric acid*** which helps in the digestion of food.
* In ***agriculture***, every crop grows better in a specific ***pH range.***

**Neutralization**

***Hydrogen ions (H+)*** from the acid are transferred to ***hydroxide (OH-)*** of the base, in which the reaction between the components ***form water and a salt***.

**Uses of indicators**

With the use of indicators chemist can determine whether a ***solution*** is ***acidic or not.***

* Indicators are used to ***monitor*** the changes of ***pH values*** of food and beverages to make sure they safe and fit for human consumption.