LRNR Classes
Class - 7th
Acid, Bases and Salt
Chapter - 5

- Acids are sour in taste. Its chemical nature is acidic. It comes from the Latin word acere or acidus which means sour. Ex - Lemon juice, curd, amla.
- Basics are bitter in taste. Its chemical nature is basic and it feels soapy on touch.

Substance	Taste (Sour/ Bitter/ Any other)
Lemon juice	Sour
Orange juice	Sour
Vinegar	Bitter
Curd	Sour
Tamarind (imli)	Sour
Sugar	Sweet
Common salt	Salty
Amla	Sour
Baking soda	Bitter
Grapes	Sour
Unripe mango	Sour
Cucumber	Bitter

- Indicator - An indicator is a special type of substance which is used to test whether a substance is acidic or basic. Ex - Methyl Orange, Phenolphthalein, Turmeric, Litmus, China rose etc.
- When we add an indicator in acidic or basic medium it shows different colours.
- Most common natural indicator is litmus and it is extracted from lichen. It has a mauve which is purple in colour in distilled water.
- Litmus papers are generally two types i.e blue litmus and red litmus. Blue litmus converts to red in acidic medium and red litmus to blue in basic medium.
- It is available in the form of solution and also in the form of strips of paper.
- The solutions which do not change the colour of red and blue litmus paper are known as neutral solutions. These solutions are neither acidic nor basic whose pH value is 7.

S. No.	***Test solution***	***Effect on turmeric solution***	***Remarks***
1.	Lemon juice	Blue	Acidic
2.	Orange juice	Blue	Acidic
3.	Vinegar	Blue	Acidic
4.	Milk of magnesia	Red	Basic
5.	Baking soda	Red	Basic
6.	Lime water	Red	Basic
7.	Sugar	No change	Neutral
8.	Common salt	No change	Neutral

S. No.	***Test solution***	***Initial colour***	***Final colour***
1.	Shampoo (dilute solution)	Green	Basic
2.	Lemon juice	Pink	Acidic
3.	Soda water	Pink	Acidic
4.	Sodium hydrogen carbonate solution	Green	Basic
5.	Vinegar	Pink	Acidic
6.	Sugar solution	Neutral	Neutral
7.	Common salt solution	Neutral	Neutral

- The China rose indicator turns dark pink in acidic solution and green in basic solution.
- Phenolphthalein indicator turns pink colour in basic solution and in acidic solution it becomes colourless.
- Methyl indicator turns yellow colour in basic solution and red in acidic solution.
- Turmeric turns deep red colour in basic solution and yellow in acidic solution.

S. No.	Name of acid	Effect on litmus paper	Effect on turmeric paper	Effect on china rose solution
1.	Dilute hydrochloric acid	Blue litmus to red	No change takes place	Pink
2.	Sulphuric acid	Blue litmus to red	No change takes place	Pink
3.	Sodium hydroxide	Red litmus to blue	Red	Green

- The reaction between acid and base is known as neutralisation reaction. In this reaction both acid and base when react with each other it forms salt and water and in this reaction heat is evolved.
  Acid+Base → Salt+Water
  (heat is evolved)
- Ex:- Hydrochloric acid (HCl) + Sodium hydroxide (NaOH) →Sodium chloride (NaCl) + Water (H_2O)

  In the above reaction when HCl is reacts with NaOH it forms NaCl and H_2O.
- Ex:- Sulphuric acid (H_2SO_4) + Lime water (CaO) → Calcium Sulphate ($CaSO_4$) + Water (H_2O)

  In the above reaction when H_2SO_4 reacts with CaO it forms $CaSO_4$ and H_2O.
- Our stomach contains hydrochloric acid but too much HCl causes indigestion. To relieve pain we take antacid such as milk of magnesia i.e. magnesium hydroxide {$Mg(OH)_2$}.
- When an ant bite, it injects formic acid into the skin. To relieve the pain we use moist baking soda (sodium hydrogen carbonate) and calamine solution (zinc carbonate).
- When we use fertilizer in the soil the soil becomes acidic or basic. If the soil becomes acidic or basic, plants do not grow well. To maintain or neutralise the basic character of soil we use quick lime (calcium oxide) or in acidic character of soil we use slaked lime (calcium hydroxide).
- Factory waste contains acid. If we allow the wastes flow into water bodies, it affects our aquatic animals and plants also. So we will allow wastes after neutralise using basic substances.

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