



1	-Acidic solutions contain hydrogen ions(H ⁺). -Alkaline solutions contain hydroxide ions (OH ⁻)
2	-An indicator can detect whether a solution is acidic or alkaline. -The most commonly used indicators are universal indicator, litmus, methyl orange and phenolphthalein.
3	The higher concentration of hydrogen ions in a certain volume, the higher the concentration of the acid.
4	The higher the concentration of hydrogen ions the more acidic the solution and lower the pH.
5	Strong acids will completely dissociate into their ions when they dissolve in water producing a high concentration of hydrogen ions.
6	A base is a substance that can neutralize an acid to form a salt and water only. All metal oxides are bases.
7	During neutralization reactions hydrogen ions combine with oxide ions to form water. Salts are produced by replacing the hydrogen ion with a metal ion. $\text{base} + \text{acid} = \text{salt and water}$
8	Acids can react with alkalis to produce a salt and water: $\text{acid} + \text{alkali} = \text{salt} + \text{water}$
9	In a neutralization reaction hydrogen ions from acids react with hydroxide ions from alkalis to produce water. $\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) = \text{H}_2\text{O}(\text{l})$
10	You can obtain a dry soluble salt from a neutralization reaction by crystallization.
11	To obtain a neutral solution you can carry out a titration to obtain only water and the desired salt (fig.1)

12	When an acid reacts with a metal it will produce a salt and hydrogen gas: $\text{metal} + \text{acid} = \text{salt} + \text{hydrogen}$
13	When a metal carbonate reacts with an acid it will produce a salt, water and carbon dioxide: $\text{metal} + \text{acid} = \text{salt} + \text{water} + \text{carbon dioxide}$
14	A precipitation reaction is when soluble substances in solutions cause an insoluble precipitate to form.
15	Ionic equations can be used to show the formation of precipitates: $\text{Pb}^{2+}(\text{aq}) + 2\text{Cl}^-(\text{aq}) = \text{PbCl}_2(\text{s})$
16	You can prepare an insoluble salt by filtration to obtain the salt (fig.2)



Fig.1



Fig.2