

CLASS - 7th

SUBJECT - SCIENCE

CHAPTER - 5th

Acids, Bases and Salts

(Note book)

1) state difference between acids and bases.

Ans ↓

Acids

Bases

1) Acids are sour in taste.

1) Bases are bitter in taste.

2) Acids turn blue litmus paper into red colour.

2) Base turn red of litmus paper into of blue colour.

3) Acids do not change the colour of turmeric.

3) Bases turn turmeric to red.

2) Ammonia is found in many household products, such as window cleaners. It turns red litmus blue. what is its nature.

Ans → Ammonia is basic in nature that's why it turns red litmus into blue.

3) Name the source from which litmus solution is obtained. what is the use of this solution?

Ans → Litmus solution is obtained from lichens plant by extraction. The product of lichens is crushed into a powder that is dissolved in water and used as the litmus solution.

4) In the distilled water acidic/basic/neutral? How would you verify it?

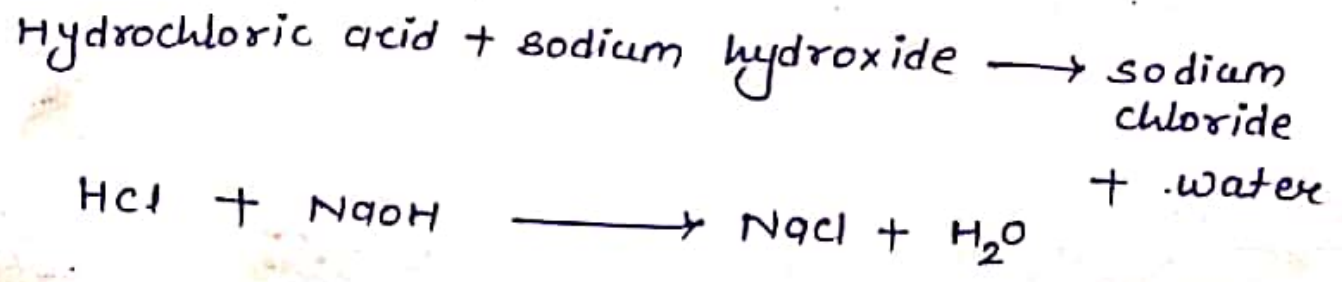
Ans → The distilled water is purely neutral in nature. we will find it by the help of litmus paper. It does not change the colour of blue or red litmus paper.

5) Describe the process of neutralisation with the help of an example.

Ans → The Reaction between an acid and a base. Salt and water are produced in these process with the evolution of heat.



The following reaction is an example.



6) Mark 'T' if the statement is true and 'F' if is false:

1) Nitric acid ~~turn~~ turn red litmus blue. (False).

2) Sodium hydroxide turns blue litmus red (False).

3) Sodium hydroxide and hydrochloric acid neutralise each other and form salt and water (True).

4) Indicator is a substance which shows different colours in acidic and basic solution. (True).

5) Tooth decay is caused by the presence of a base. (False).

7) Dorji has a few bottles of soft drink in his restaurant. But, unfortunately, these are not labelled. He has to serve the drinks on the demand of customers. One customer wants acidic drink, another wants basic and third one wants neutral drink. How will Dorji decide which drink is to be served to whom?

Ans → Dorji can taste a few drops out of soft drink bottles, acidic solution is sour in taste, basic solution is bitter in taste, and the neutral solution has no taste. Along with testing Dorji can use litmus paper to test the nature of soft drink.

(4)

He should use blue litmus paper to test the acidic solution. Doji has to put a drop of solution on blue litmus. If it turns red then the solution will be acidic in nature.

Similarly, he can use red litmus paper to test the basic solution. He has to put a drop of solution on red litmus. If it turns blue then the solution will be basic in nature.

8) Explain why:

① An antacid tablet is taken when you suffer from acidity.

Ans → The antacid tablet contain base like milk of magnesia which neutralises the acid produced in the stomach. Hence, it is used while suffering from acidity.

a) Calamine solution is applied on the skin when an ant bites.?

Ans → when ant bites, it injects formic acid inside the skin. Calamine consist zinc carbonate which is basic in nature. Hence calamine neutralises the effect to formic acid to bring relief for the affected person.

(5)

c) Factory waste is neutralised before disposing it into the water bodies.

Ans → Factory wastes are acidic in nature which may cause harm to the aquatic life. Hence, they are neutralised by using a base before disposing it into the water bodies.

g) Three liquids are given to you. one is hydrochloric acid another is sodium hydroxide and third is sugar solution. How will you identify them? you have only turmeric indicator.

Ans → we have only a turmeric indicator. we will put all three liquid in small quantity. In a test tube, then we will add a pinch of turmeric in it. Turmeric will give red colour with base, no any reaction in neutral medium, but fumes and heat will get involves in case of an acid.

10) Blue litmus paper is dipped in a solution. It remain blue. what is nature of the solution? - Explain.

Ans → If the strip of blue litmus remain blue after dipped into the solution must be basic or neutral in nature.

(6)

(Book activity)

11) consider the following statement.

a) Both acids and bases change colour of all indicators.

b) If an indicator gives a colour change with an acid, it does not give a change with a base.

c) If an indicator changes colour with a base, it does not change colour with an acid.

d) Change of colour in an acid and a base depends on the type of the indicator.

Which of these statements are correct.

1) all four 2) a and d 3) b and c

4) only d.

Ans \rightarrow 4) (only d.)

Additional questions

(7)

(Note book)

1) What is an indicator? Name some natural and synthetic indicators?

Ans → An indicator is a 'dye' that changes colour when it is put in an acid or base.

It examines the nature of a substance.

1) Litmus, turmeric and China rose are natural indicators.

2) Phenolphthalein is a synthetic indicator.

2) What do you mean by neutral substances?

Ans → Those substances which are neither acidic nor basic in nature are called neutral substances.

~~Neutral~~ Neutral substances do not change the colour of any indicator.

Example —: pure water (distilled water), glucose, cane sugar and salt.

4) What is a salt? Name any two salts.

Ans → A salt is a substance formed by the reaction of any acid with base. Salt can be of three types.

1) Neutral salts 2) Acidic salts 3) Basic salts.

Example — sodium chloride (NaCl), sodium sulphate (8) (Na_2SO_4),

4) How can three type of salt be formed?

Ans \rightarrow There are three types of salt.

1) Neutral salt \rightarrow It is formed by the neutralisation of a strong acid and a strong base

Ex \rightarrow ~~NH_4Cl~~ NaCl .

2) Acidic salt \rightarrow It is formed by the neutralisation of an strong acid and a weak base.

Ex \rightarrow NH_4Cl

3) Basic salt \rightarrow It is formed by the neutralisation of a strong base and a weak acid

Ex \rightarrow (Na_2CO_3)

5) Name some strong acid, bases and weak acid bases?

Ans \rightarrow Strong acid

1) Hydrochloric acid (HCl)

2) Nitric acid (HNO_3)

3) Sulphuric acid (H_2SO_4)

Weak acid

1) Acetic acid (CH_3COOH)

2) Formic acid (HCOOH)

3) Oxalic acid ($\text{C}_2\text{H}_2\text{O}_4$)

strong base

1) sodium hydroxide (NaOH)

2) potassium hydroxide (KOH)

weak base

1) magnesium hydroxide
 $Mg(OH)_2$

2) calcium hydroxide
 $Ca(OH)_2$

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