



INDIAN SCHOOL AL WADI AL KABIR



CLASS: VII	DEPARTMENT: SCIENCE 2021 - 2022	DATE: 14/11/2021
TEXTBOOK Q & A	TOPIC: ACIDS, BASES AND SALTS	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

1. State the differences between acids and bases.

<i>ACIDS</i>	<i>BASES</i>
<ul style="list-style-type: none">Acids are sour to taste.	<ul style="list-style-type: none">Bases are bitter to taste and soapy to touch.
<ul style="list-style-type: none">Acids turn blue litmus red.	<ul style="list-style-type: none">Bases do not change the colour of blue litmus.
<ul style="list-style-type: none">Acids do not change the colour of red litmus.	<ul style="list-style-type: none">Bases turn red litmus blue.
<ul style="list-style-type: none">With china rose indicator, these give dark pink colour	<ul style="list-style-type: none">Bases give green colour with china rose indicator
<ul style="list-style-type: none">Acids do not change the colour of turmeric indicator	<ul style="list-style-type: none">Bases turn the colour of turmeric indicator 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 as it turns the colour of red litmus paper to blue.

(Concept insight: Bases turn red litmus to 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. A natural dye extracted from lichens is dissolved in distilled water to obtain litmus solution.

<i>SOLUTION</i>	<i>COLOUR OF LITMUS SOLUTION</i>
Acidic	Red
Basic	Blue
Neutral	No change

It is used as an indicator to distinguish between acids and bases.

(Concept insight: Indicator is a substance which is used to distinguish between acids and bases.)

4. Is distilled water acidic/basic/neutral? How will you verify it?

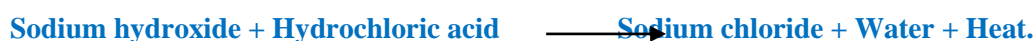
Ans - Distilled water is neutral in nature. The same can be verified by using red and blue litmus papers. Neither will show a colour change with distilled water. This proves that distilled water is neutral.

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

Ans - The reaction between an acid and a base is known as neutralisation reaction. In this reaction, both acid and base cancel each other's effect. Neutralisation reaction results in the formation of salt and water. During this reaction, energy in the form of heat is evolved.



For example, when sodium hydroxide is added to hydrochloric acid, sodium chloride and water are obtained.



In neutralisation reaction, acid and base nullify each other's effect and produce a salt and water.

6. Mark T if the statement is true and F if the statement is false -

(i) Nitric acid turns red litmus blue. **(F)**

(Concept insight: Nitric acid is an acid and turns blue litmus red.)

(ii) Sodium hydroxide turns blue litmus red. **(F)**

(Concept insight: Sodium hydroxide is a base and will turn red litmus blue.)

(iii) Sodium hydroxide and hydrochloric acid neutralise each other and form salt and water. **(T)**

(Concept insight: Reaction between an acid and base is called neutralisation.)

(iv) Indicator is a substance which shows different colour in acidic and basic solutions. **(T)**

(v) Tooth decay is caused by the presence of a base. **(F)**

(Concept insight: Tooth decay is caused by the acid released by bacteria by decomposing left over food particles in our mouth.)

7. Dorji has a few bottles of soft drinks in his restaurant. But unfortunately, they are not labelled.

He has to serve the drinks on the demand of customers. One customer wants acidic drink the

other basic and the third neutral drink. How will Dorji decide which drink is to be served and to whom?

Ans - Since the soft drinks are edible, Dorji can take the decision by tasting the drinks. Acidic drinks will be sour to taste whereas basic drinks will be bitter to taste and neutral drinks will have no taste.

He can also use litmus paper to identify the acid, base and neutral drink. If Dorji has litmus indicator (solution or paper), then he can take its help.

He should put one drop of each sample soft drink on blue litmus paper. If the colour of the litmus paper changes to red, then it is an acidic drink.

Out of the remaining drinks, some are basic and some are neutral. Again, he should put one drop of the remaining drinks on red litmus paper. If the colour changes to blue, then it is basic and the others are neutral. In this way, he can serve all the three customers their respective drinks.

(Concept insight: Litmus paper is an indicator. An acid turns blue litmus red and a base turns red litmus blue)

8. Explain why:

a) An antacid tablet is taken when you suffer from acidity.

Ans - This is because during acidity, an excess of acid is produced in the stomach. An antacid contains base, such as milk of magnesia. These bases react with excess of acids and neutralise their effect, thus giving us relief.

(Concept insight: Antacid contains base (magnesium hydroxide) which neutralises excess of acid produced in the stomach.)

b) Calamine lotion is applied on the skin when an ant bites.

Ans - When an ant bites, it injects formic acid into the skin. Calamine solution contains zinc carbonate which is basic in nature. Therefore, it is applied on the skin to neutralise the effect of formic acid.

(Concept insight: Calamine neutralises the effect of formic acid and thus relieves pain).

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

Ans - Factory wastes contain acids. Therefore, these wastes, when thrown directly to water bodies, harm aquatic lives. Hence, these wastes are neutralised with basic chemicals before disposing to water bodies.

(Concept insight: Industrial wastes are acidic and are very harmful to aquatic organisms hence, bases are added to these so that it may not harm aquatic organisms.)

9. Three liquids are given to you. One is hydrochloric acid, second is sodium hydroxide and third is sugar solution. How will you identify them? You have only turmeric indicator.

Ans - We will put a drop each of hydrochloric acid, sodium hydroxide, and sugar solution on the turmeric indicator. The liquid which changes the colour of turmeric indicator to red is basic in nature, that is, sodium hydroxide.

Now, this red turmeric paper may be used to identify which one of the remaining two liquids is hydrochloric acid. Put one drop of each of these remaining liquid on the red turmeric paper. The liquid whose drop will turn this red paper yellow is hydrochloric acid. This colour changes from red to yellow because hydrochloric acid neutralises the effect of sodium hydroxide on turmeric paper.

There is no effect on turmeric solution by sugar solution.

(Concept insight: Turmeric is also an acid-base indicator. It turns red with base and remains colorless with acid.)

10. Blue litmus paper is dipped in a solution. It remains blue What is the nature of the solution? Explain.

Ans - The above solution could be a base or a neutral solution because:

- Bases turn red litmus to blue but do not react with blue litmus.
- Neutral substance also does not react with litmus solution.

(Concept insight: Bases do not react with blue litmus. Neutral substances also do not react with litmus solution.)

11. Consider the following statements:

- Both acids and bases change colour of all indicators.
- If an indicator gives colour change with an acid, it does not give a change with a base.
- If an indicator changes colour with a base it does not change colour with acid.
- Change of colour in an acid or base depends on the type of indicator

Which of these statements are correct?

- i) All four ii) (a) and (d) iii) (b) and (c) iv) only (d)

Ans - (iv) Only d is correct.

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