



Class: VII	DEPARTMENT: SCIENCE 2023-24	DATE: 02-11-2023
WORKSHEET NO: 11 WITH ANSWERS	TOPIC: ACIDS, BASES AND SALTS	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. OBJECTIVE-TYPE QUESTIONS

1. Anu revisited a historical monument after 10 years. She noticed that the white monument had turned yellowish. Which event is most likely to have caused the change in colour of the monument?

- a. Flood
- b. Draught
- c. Acid rain**
- d. Thunderstorm

2. A student studies that a substance that tastes sour is generally acidic in nature. The table lists a few substances found in the kitchen.

Which of these substances are acidic in nature?

- a. Curd and Corn
- b. Corn and banana
- c. Orange and corn
- d. Orange and curd**

Curd
Banana
Orange
Corn

3. A student took a half-filled test tube with dilute hydrochloric acid and a few drops of phenolphthalein in the solution. As he put a few drops of sodium hydroxide into the solution, it turned light pink. Further, he put a few extra drops of the acid and observed that the colour disappeared. What caused the colour to disappear from the solution?

- a. The volume of the solution increased
- b. The mixture turned into a neutral solution.**
- c. The amount of acid in the solution decreased.
- d. The amount of base in the solution increased.

4. A scientist tests a soil sample from an uncultivated field and concludes that the soil is highly basic in nature. She suggests that adding organic matter to the soil could improve the quality of the soil. How does organic matter improve the quality of the soil?

- a. It releases acids which neutralise the soil.**
- b. It traps water vapour and increases the moisture content.
- c. It makes the soil lighter so that it can be easily transported.

d. It acts as food for the organisms already present in the soil.

5. Which of the following is an acid-base indicator?

a. Vinegar

b. Lime water

c. Turmeric

d. Baking soda

6. A substance 'X' is found in the milk of magnesia which on testing with red litmus turned blue. What is 'X'?

a. An acid

b. A base

c. Water

d. A salt

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below

i) Both A and R are true and R is the correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

7. **Assertion (A):** Calamine lotion is applied on the skin when an ant bites.

Reason (R): When an ant bites, it injects a basic substance into our skin.

iii) A is true but R is false.

8. **Assertion (A):** Distilled water is considered as a neutral substance.

Reason (R): Distilled water is neither acidic nor basic in nature.

i) Both A and R are true and R is the correct explanation of the assertion.

9. **Assertion (A):** Blue litmus turns red in the presence of vinegar.

Reason (R): Vinegar is acidic in nature.

i) Both A and R are true and R is the correct explanation of the assertion.

10. **Assertion (A):** In a neutralisation reaction, heat is always produced, or evolved.

Reason (R): The evolved heat decreases the temperature of the reaction mixture.

iii) A is true but R is false.

II. VERY SHORT QUESTIONS (2M):

1. What are the effects of acid rain? [**Hint: Acid rain can cause damage to buildings, historical monuments, plants and animals.**]

2. Kavya is trying to wash the yellow stain on her clothes with soap, and she noticed the stain colour changed to red.

i. Name the natural indicator found in the curry. **[Hint: Turmeric]**

ii. What is the nature of the soap? **[Hint: Basic]**

3. A person is suffering from acidity due to indigestion. Is it advisable to give her orange juice in this situation and why?

[Hint: Orange juice contains citric acid hence it should not be given as orange juice can increase the acidity. Instead, milk of magnesia, a base should be given to neutralise the effect of acidity.]

4. The use of diesel vehicles causes a lot of sulphur dioxide gas emissions. On a rainy day due to heavy traffic jams on the city roads, the emissions were higher than normal. The emission dissolved in rain causing acid rain. What would be the nature of sulphur dioxide gas?

[Hint: sulphur dioxide gas dissolves in raindrops to form sulphuric acid which is acidic in nature.]

5. What are salts? What is the chemical name of common salt?

[Hint: Salts are substances generally formed by the neutralisation of an acid with a base. The chemical name of common salt is sodium chloride.]

6. Why should acids and bases be handled with care?

[Hint: Great care should be taken while handling laboratory acids and bases because these are corrosive in nature and can cause skin irritation and burns.]

III. SHORT ANSWER TYPE QUESTIONS: (3M)

1. Explain acid rain.

[Hint: The rain containing excess acids is called acid rain. The rain becomes acidic because carbon dioxide, sulphur dioxide and nitrogen dioxide gases which are released into the air as pollutants dissolve in raindrops to produce carbonic acid, sulphuric acid and nitric acid respectively. It damages buildings and monuments. E.g. The Taj Mahal]

2. **ACID + BASE \longrightarrow SALT + WATER**

i. Name the above reaction. **[Hint: Neutralisation reaction]**

ii. Give an example of this type of reaction.

[Hint: Hydrochloric acid reacts with sodium hydroxide producing salt and water.]

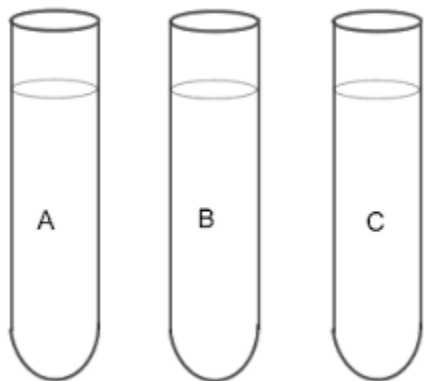
iii. Write its word equation.

[Hint: Hydrochloric acid + Sodium hydroxide \longrightarrow Sodium chloride + Water]

3. Is the distilled water acidic/ basic/ neutral? How would you verify it?

[Hint: Distilled water is neutral in nature. This can be verified by using red and blue litmus papers. Both the indicators will not show a change in colour with distilled water. This proves that distilled water is neutral.]

4. Observe the figure given below. If we dip a piece of blue litmus to each, what colour change would you observe in each of the test tubes A, B and C?



A- Lemon juice

B- Sugar solution

C- Lime water

[Hint- A- Changes to red, B- No colour change/ remains blue, C- No colour change/remains blue]

5. Roy added dilute sulphuric acid to lime water. Will the reaction mixture become hot or cold?

[Hint: Sulphuric acid will react with calcium hydroxide (lime water.) to give salt and water. Heat is generally released during neutralisation reactions and the temperature of the solution rises. On touching the test tube, we can feel the heat produced by the reaction of dilute sulphuric acid and lime water.]

IV. LONG ANSWER TYPE QUESTIONS. (5M):

1. Explain any 5 neutralisation reactions used in our daily life situations.

[Hint: 1. Indigestion: Our stomach produces hydrochloric acid. Sometimes, excess hydrochloric acid is produced in the stomach which causes indigestion. Due to indigestion, sometimes a person feels pain in the stomach and irritation. To relieve indigestion, we take an antacid such as milk of magnesia. Milk of magnesia contains a base called magnesium hydroxide. Magnesium hydroxide neutralises the excess acid present in the stomach and cures indigestion. Another antacid is baking soda which contains a base of sodium hydrogen carbonate.

2. **Ant Bite:** When an ant bites, it injects an acidic liquid (formic acid) into the skin. The effect of the acid can be neutralised by rubbing a mild base like baking soda solution (sodium hydrogen carbonate) or calamine solution. Calamine solution contains a base called zinc carbonate. Thus, being a base, baking soda solution or calamine solution neutralises the acidic liquid injected by the ant and cancels its effect.

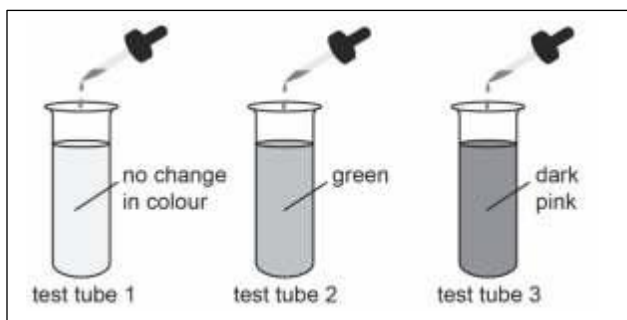
3. **Wasp sting:** The wasp stings are basic and can be neutralised by rubbing an acidic substance like vinegar.

4. **Soil Treatment-** The soil may be acidic or basic naturally. The plants do not grow well if the soil at a place is too acidic or too basic. Excessive use of chemical fertilisers makes the soil acidic. When the soil is too acidic, it is treated with bases like quicklime (calcium oxide) or slaked lime (calcium hydroxide). These bases neutralise the excess acid present in the soil and reduce its acidic nature. If the soil is basic, organic matter called manure or compost is added to it. The organic matter releases acids which neutralise the excess bases present in the soil and reduce their basic nature.

5. **Factory Wastes:** The waste substances discharged by many factories contain acids. If these factory wastes are allowed to flow into the water bodies (like rivers, ponds, lakes, etc), then the acid present in them will kill fish and other organisms which live in the water bodies. The factory wastes are therefore neutralised by adding basic substances before discharging them into water bodies.]

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS:

1. Zena takes 10 ml of three colourless liquids in separate test tubes. She adds 5 drops of china rose indicator to each test tube. The pictures show the colour of the liquid in each test tube after the addition of the indicator.



i. Which test tube contains liquid soap and why?

[Hint: Test tube 2- as liquid soap contains base and bases turn green colour with china rose extract]

ii. How can we prepare the China rose indicator?

[Hint: Collect some China rose (Gudhal) petals and place them in a beaker. Add some warm water. Keep the mixture for some time till the water becomes coloured. Use the coloured water as an indicator].

iii Which test tube contains a neutral substance?

[Hint: Test tube 1]

iv. What is the colour change observed when china rose extract is added to an acidic substance?

[Hint: The solution turns pink/magenta]

PREPARED BY Ms. SHRUTI MUKUNDAN	CHECKED BY HoD SCIENCE
------------------------------------	---------------------------