Very Short Answer Questions

Q.1. Paheli is suffering from indigestion due to acidity. Is it advisable to give her orange juice in this situation and why?

[NCERT Exemplar]

Ans. No, because orange juice is acidic in nature.

Q.2. What is an indicator?

Ans. An indicator is a special chemical that changes its colour to indicate the presence of a chemical substance whether it is acidic or basic.

Q.3. What is meant by 'basicity' of an acid?

Ans. Basicity is the measure of basic nature in an acidic substance.

Q.4. Does an acidic solution conduct electricity?

Ans. Yes, an acidic solution conducts electricity.

Q.5. Name three organic acids which are used by us as food ingredients.

Ans. The three organic acids used as ingredients are citric acid, tartaric acid and ascorbic acid.

Q.6. What are the harmful effects of acid rain?

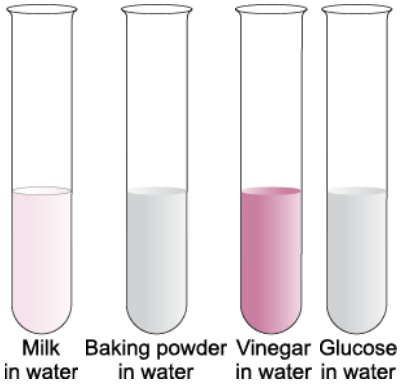
Ans. Acid rain can cause damage to buildings, historical monuments, plants and animals.

Q.7. Why a turmeric stair on a white shirt is turned to red when it is washed with soup?

Ans. It is because the soap solution is basic.

Short Answer Questions

Q.1. Look at the figures given below which shows solutions taken in test tubes A, B, C and D. What colour is expected when a piece of red litmus paper is dropped in each test tube? Nature of the solutions is given in the table for your help.



Test tube	Nature of solution	Change in colour of red litmus
A **B** **C** **D**	**Neutral** **Basic** **Acidic** **Neutral**	

[NCERT Exemplar]

Ans.

Test tube	Nature of solution	Change in colour of red litmus
A	Neutral	No change
B	Basic	Turns blue
C	Acidic	No change
D	Neutral	No change

Q.2. While playing in a park, a child was stung by a wasp. Some elders suggested applying paste of baking soda and others lemon juice as remedy. Which remedy do you think is appropriate and why?

[NCERT Exemplar]

Ans. Wasp sting inject a liquid in the skin which is acidic in nature. Hence, baking soda is the appropriate remedy, as it is basic in nature and neutralises effect of the acid.

Q.3. Write two uses of the following.

(a) Calcium hydroxide

(b) Sodium hydroxide

Ans. (a) Calcium hydroxide

1. It is used to make chalks.
2. It is used in preparation of insecticides and fungicides.

(b) Sodium hydroxide

1. It is used in manufacturing of soaps and detergents.
2. It is used to manufacture paper in wood industry.

Q.4. Why is carbonic acid added to soft drinks?

Ans. Carbonic acid is added to soft drinks to make it fizzy. When the bottle is opened, the pressure decreases and the carbonic acid changes into carbon dioxide and water making it fizzy.

Q.5. Why should we take great care while handling acids and bases?

Ans. We should take great care while handling acids and bases because these are corrosive in nature, irritating and harmful to skin.

Q.6. What is acid rain?

Ans. The rain becomes acidic due to dissolution of carbon dioxide, sulphur dioxide and nitrogen dioxide in rain drops to form carbonic acid, sulfuric acid and nitric acid respectively.

Long Answer Questions

Q.1. Boojho, Paheli and their friend Golu were provided with a test tube each containing China rose solution which was pink in colour. Boojho added two drops of solution 'A' in his test tube and got dark pink colour. Paheli added 2 drops of solution 'B' to her test tube and got green colour. Golu added 2 drops of solution 'C' but could not get any change in colour. Suggest the possible cause for the variation in their results.

[NCERT Exemplar]

Ans. China rose indicator turns acidic solutions to dark pink (magenta) and basic solutions to green. Thus 'A' is an acidic solution and 'B' is a basic solution. No change in colour of solution 'C' indicates that 'C' is a neutral solution.

Q.2. A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realised that the soil of his field was either too acidic or too basic. What remedy would you suggest the farmer to neutralise the soil?

[NCERT Exemplar]

Ans. If the soil is too acidic, it is to be treated with bases such as quicklime (calcium oxide) or slaked lime (calcium hydroxide). If the soil is too basic, organic matter is added to it. Organic matter releases acids which neutralise the basic nature of the soil.

Q.3. You are provided with four test tubes containing sugar solution, baking soda solution, tamarind solution, salt solution. Write down an activity to find the nature (acidic/basic/neutral) of each solution.

[NCERT Exemplar]

Ans.

Aim:

To find the nature of (acidic/basic/neutral) of each given solution (sugar, solution, baking soda solution, tamarind solution, salt solution).

Method:

- With the help of a dropper put a drop of sugar solution on a strip of the blue litmus paper, no colour change. Now repeat the above step with red litmus paper, again no colour change will be observed. It indicates the sugar solution is neutral in nature.
- Now, repeat the above activity with the other solutions. (Salt solutions, Baking soda solutions and tamarind solution.) We observe that

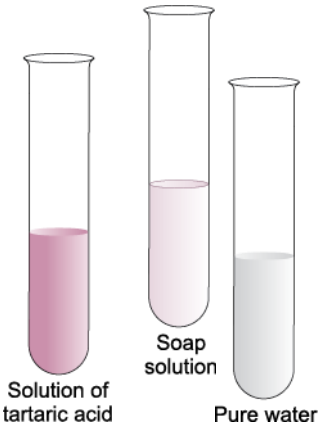
	Solution	Effect on red litmus solution	Effect on blue litmus solution	Nature of solution
1.	Sugar solution	No change	No Change	Neutral
2.	Baking soda solution	Red litmus change to blue	No Change	Basic
3.	Tamarind solution	No Change	Blue litmus changes to red	Acidic
4.	Salt solution	No Change	No Change	Neutral

Q.4. You are provided with three test tubes A, B and C as shown in figure with different liquids. What will you observe when you put

(a) a piece of blue litmus paper in each test tube?

(b) a piece of red litmus paper in each test tube?

(c) a few drops of phenolphthalein solution to each test tube?



[NCERT Exemplar]

Ans.

Test tube	Effect on blue litmus	Effect on red litmus	Effect on phenophthaleinsolution
A	Turns red	Colourless	Colourless
B	Remains blue	Turns blue	Pink colour
C	Remains blue	Remains red	Colourless

Q.5. Paheli observed that most of the fish in the pond of her village were gradually dying. She also observed that the waste of a factory in their village is flowing into the pond which probably caused the fish to die.

(a) Explain why the fish were dying.

(b) If the factory waste is acidic in nature, how can it be neutralised?

[NCERT Exemplar]

Ans. (a) Since factory waste may contain acids or bases, it can kill the fish.

(b) If the factory waste is acidic in nature, it can be neutralised by adding basic substances like quicklime or slaked lime.

Q.6. Explain two neutralisation reactions related to daily life situation.

[NCERT Exemplar]

Ans. (a) Indigestion: Sometimes, the stomach produces too much hydrochloric acid, called hyperacidity, which causes indigestion. The acid is neutralised by taking a tablet (antacids) containing calcium carbonate, aluminium or sodium hydrogencarbonate.

(b) Ant sting: When you are stung by an ant, the burning sensation on your skin is caused by methanoic acid. You can neutralise the acid by rubbing a dock leaf on the wound. As you press the dock leaf against the wound, a base in the leaf juices reacts with the acid in the sting and neutralises it so that the burning sensation stops.

Q.7. Give two uses of the following acids.

a. **Nitric acid**
b. **Hydrochloric acid**
c. **Sulphuric acid**

Ans. (a) Nitric acid

1. It is used by goldsmiths for cleaning gold and silver ornaments.
2. It is used to make fertilisers.

(b) Hydrochloric acid

1. It is secreted in stomach for digestion.
2. It is used to remove rust from iron before galvanising and painting.

(c) Sulphuric acid

1. It is used in batteries of cars, buses and inverters.
2. It is used for preparing alum.

Hots (Higher Order Thinking Skills)

Q.1. If you are given a colourless liquid, how will you find out if it is an acid or a base without tasting it?

Ans. We can find out by using an indicator like litmus paper. If on putting some drops of the liquid on red litmus paper it turns blue, the liquid is a base and if it remains unchanged then it is an acid.

Q.2. Why do copper and brass vessels need ‘kalai’?

Ans. Copper and brass vessels on reacting with acids get corroded. Kalai prevents their corrosion.

Q.3. What happen to the dry litmus paper used to test the nature of solid baking soda. Give reason of your answer.

Ans. No change will be observed, because baking soda in solid state do not contain free ions to more while if we use baking soda solution due to presence of free ions, now it could litmus paper will convert into blue, because baking soda solution is basic in nature.