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

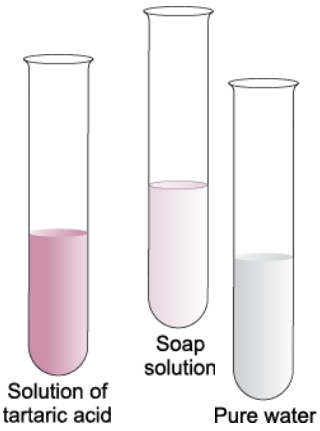
	Solution	Effect on red litmus solution	Effect on blue litmus solution	Nature of solution
1.	Sugar solution	No change	No Change	Neutral
2.	Baking soda solution	Red litmus change to blue	No Change	Basic
3.	Tamarind solution	No Change	Blue litmus changes to red	Acidic
4.	Salt solution	No Change	No Change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