



INDIAN SCHOOL AL WADI AL KABIR



CLASS: VII	DEPARTMENT: SCIENCE 2026 - 27	DATE: 24/08/2026
TEXTBOOK Q &A	TOPIC: EXPLORING SUBSTANCES: ACIDIC, BASIC AND NEUTRAL	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

1. A solution turns the red litmus paper blue. Excess addition of which of the following solutions would reverse the change?

- (i) Lime water
- (ii) Baking soda
- (iii) Vinegar
- (iv) Common salt solution

Answer: (iii) The solution turns from red to blue, which means it is basic. To reverse this, an acid is needed. Lime water and baking soda are basic, and the common salt solution is neutral, so they will not reverse the change. Vinegar is acidic, so it will change the colour back to red.

2. You are provided with three unknown solutions labelled A, B, and C, but you do not know which of these are acidic, basic, or neutral. Upon adding a few drops of red litmus solution to solution A, it turns blue. When a few drops of turmeric solution are added to solution B, it turns red. Finally, after adding a few drops of red rose extract to solution C, it turns green. Based on the observations, which of the following is the correct sequence for the nature of solutions A, B, and C?

- (i) Acidic, acidic, and acidic
- (ii) Neutral, basic, and basic
- (iii) Basic, basic, and acidic
- (iv) Basic, basic, and basic

Answer:

(iv) Solution A turns red litmus to blue – Basic in nature, Solution B turns turmeric solution to red – Basic in nature, Solution C turns rose extract to green – Basic in

nature. Thus, the correct sequence for the nature of solutions A, B and C is basic, basic and basic.

3. Observe and analyse Figs. 2.13, 2.14, and 2.15, in which red rose extract paper strips are used. Label the nature of solutions present in each of the containers.



Answer: The red rose extract turns red in acidic solutions and green in basic solutions. In Fig. 2.13, the red rose extract paper strip turns green, indicating that the solution in this container is basic in nature. In Fig. 2.14, there is no change in the colour of the strip, which shows that the solution is neutral. However, in Fig. 2.15, the strip turns red, indicating that the solution is acidic in nature.

4. A liquid sample from the laboratory was tested using various indicators:

Indicator	Red litmus	Blue litmus	Turmeric
Change	No change	Turned red	No change in colour

Based on the tests, identify the acidic or basic nature of the liquid and justify your answer.

Answer: The given liquid sample is acidic in nature. It does not affect red litmus paper, but it turns blue litmus paper red, which is an indication of acidic nature. Also, there is no change in the turmeric indicator, confirming its acidic nature.

5. Many is blindfolded. She is given two unknown solutions to test and determine whether they are acidic or basic. Which indicator should Many use to test the solutions and why?

Answer: Many should use an olfactory indicator to test the solutions. Olfactory indicators change their smell in acidic or basic solutions. For example, the characteristic smell of onion remains unchanged and can be easily detected with acidic substances, while with basic substances the characteristic smell of onion is destroyed or vanishes.

6. Could you suggest various materials which can be used for writing the message on the white sheet of paper (given at the beginning of the chapter) and what could be in the spray bottle? Make a table of various possible combinations and the colour of the writing obtained.

Answer: The colour of the writing will depend on the nature of the writing material

(acidic or basic) and the solution in the spray bottle (acidic or basic). Below is the table of possible combinations.

Writing Material	Substance in Spray Bottle	Colour of Writing (on paper)
Lemon juice	Blue litmus solution	Red
Baking soda solution	Red litmus solution	Blue
Baking soda solution	Red Rose extract	Green
Vinegar	Red Rose extract	Red
Soap solution	Turmeric solution	Red
Tamarind water	Red hibiscus extract	Pink
Soap solution	Red hibiscus extract	Green

7. Grape juice was mixed with red rose extract; the mixture got a tint of red colour. What will happen if baking soda is added to this mixture? Justify your answer.

Answer: When grape juice is mixed with red rose extract, the resulting mixture shows a red tint, indicating that grape juice is acidic. Now, if you add baking soda (a basic substance) to this mixture, the solution will neutralise the acid in the mixture, and the solution will become basic. Now, the colour of rose water extract will change to green, indicating the basicity of the solution.

8. Keerthi wrote a secret message to her grandmother on her birthday using orange juice. Can you assist her grandmother in revealing the message? Which indicator would you use to make it visible?

Answer: Keerthi's grandmother can reveal the secret message by using acid-base indicators, as orange juice is acidic in nature. She can use rose extract or beetroot juice (which will turn red) or Indian blackberry extract (which will turn pink) to make the message visible.

9. How can natural indicators be prepared? Explain by giving an example.

Answer: Natural indicators can be made using plant materials with pigments that change colour with acid or base. For example, to make red rose extract:

- 1. Wash and crush rose petals.**
- 2. Place them in a glass tumbler and add hot water.**
- 3. Let it sit for 5-10 minutes, then filter the mixture.**

The resulting liquid is a natural indicator that turns red in acids and green in bases.

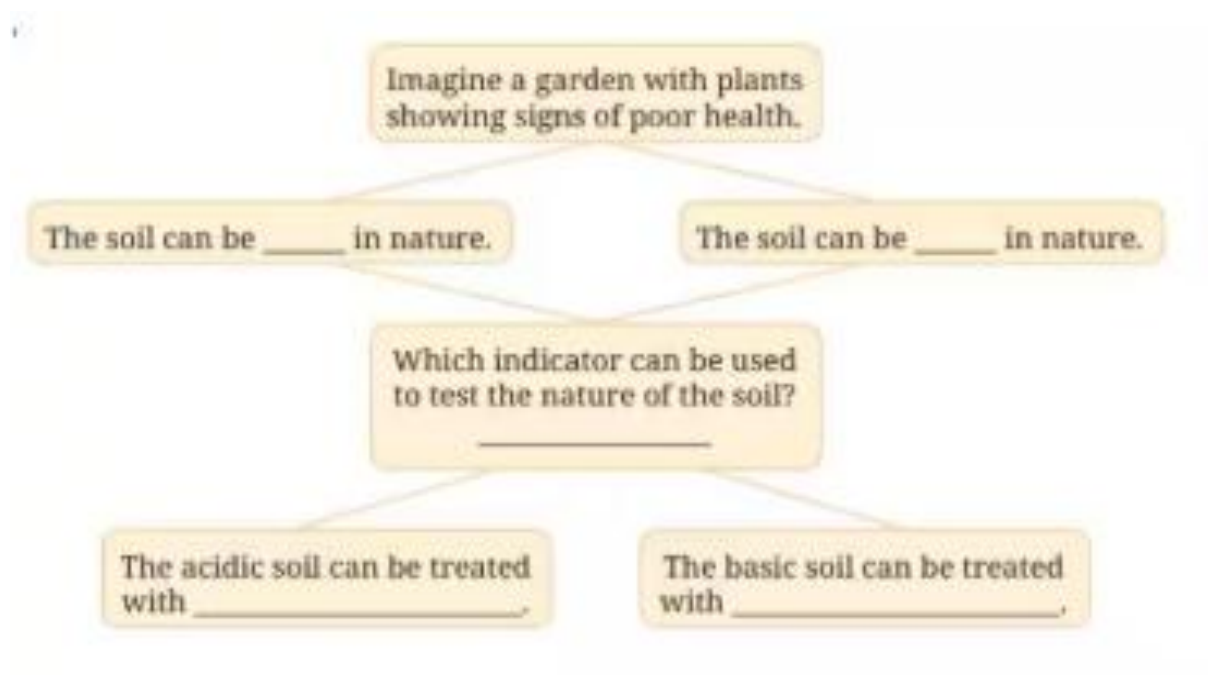
10. Three liquids are given to you. One is vinegar, another is a baking soda solution, and the third is a sugar solution. Can you identify them only using turmeric paper? Explain.

Answer: Using turmeric paper, we can identify a basic solution but not an acidic or neutral solution. When a baking soda solution (basic) is tested, the turmeric paper will turn red. However, both vinegar (acidic) and sugar solution (neutral) will leave the paper yellow, as turmeric paper does not change colour in acidic or neutral solutions. Therefore, turmeric paper can only identify a basic solution.

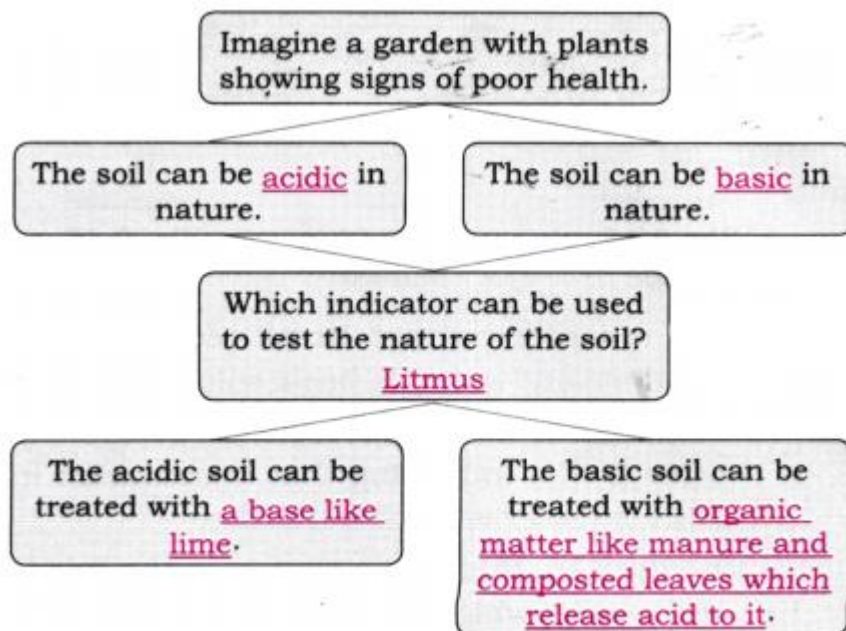
11. The extract of red rose turns the liquid X to green. What will the nature of liquid X be? What will happen when excess of amla juice is added to liquid X?

Answer: If the extract of red rose turns the liquid X green, it indicates that liquid X is basic. Red rose extract acts as an indicator, turning red in acidic solutions and green in basic solutions. When excess amla juice (which is acidic) is added to liquid X, it will neutralise the base. The green colour of the liquid will turn red as the solution becomes more acidic due to the addition of the acidic amla juice.

12. Observe and analyse the information given in the following flowchart. Complete the missing information.



Answer:



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