

Acids, Bases and Salts

Science · Class 7 · Topic-wise Practice Worksheet

TIME 45 minutes	QUESTIONS 18	TOTAL MARKS 24	MAX. SCORE ___ / 24
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **18 questions** in this worksheet. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–15 carry **1 mark** each. Questions 16–18 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Study every diagram and table carefully.

Section A — Scientific Reasoning

Q1–Q8 · 1 mark each

- Substances that taste sour and turn blue litmus red are called _____.
 (A) Acids (B) Bases
 (C) Salts (D) Indicators
- Which acid is present in lemon juice?
 (A) Acetic acid (B) Tartaric acid
 (C) Lactic acid (D) Citric acid
- Which of these is a natural indicator?
 (A) Litmus (B) Phenolphthalein
 (C) Methyl orange (D) Universal indicator paper
- Turmeric paper turns _____ when a base is added to it.
 (A) Blue (B) Red
 (C) Yellow (D) Green
- The reaction between an acid and a base, giving a salt and water, is called _____.
 (A) Oxidation (B) Displacement
 (C) Neutralisation (D) Sublimation
- Which of these solutions would turn red litmus blue?
 (A) Lemon juice (B) Vinegar
 (C) Curd (D) Soap solution
- The acid present in our stomach that helps in digestion is _____.
 (A) Hydrochloric acid (B) Sulphuric acid
 (C) Nitric acid (D) Citric acid
- A solution that is neither acidic nor basic is said to be _____.
 (A) Saturated (B) Neutral
 (C) Concentrated (D) Dilute

9. In the table below, which row is **incorrectly** matched?

Row	Substance	Acid it contains
(A)	Vinegar	Acetic acid
(B)	Curd	Lactic acid
(C)	Tamarind	Citric acid
(D)	Ant sting	Formic acid

Table 9.1 — Natural sources of acids

- (A) Row (A) (B) Row (B)
(C) Row (C) (D) Row (D)
10. A person suffering from acidity is given an antacid such as milk of magnesia. How does it work?
(A) It adds more acid to the stomach (B) It coats the stomach with fat
(C) It is a mild base that neutralises the excess acid (D) It makes the person vomit
11. When an ant stings, the skin burns and itches. Rubbing which of these gives relief?
(A) Lemon juice (B) Vinegar
(C) Curd (D) Baking soda solution
12. Factory waste is often acidic. Why is it treated with a base before being released into a river?
(A) To neutralise the acid, so it does not harm aquatic life (B) To make it change colour
(C) To make it evaporate faster (D) To make it heavier
13. Farmers add quicklime or slaked lime to soil that is too acidic. This is an example of _____.
(A) Sublimation (B) Neutralisation
(C) Evaporation (D) Filtration
14. A student dips blue litmus paper into four solutions. In which one will it stay **blue**?
(A) Lemon juice (B) Dilute hydrochloric acid
(C) Sodium hydroxide solution (D) Vinegar
15. Why does a turmeric stain on a white shirt turn red when soap is rubbed on it?
(A) Soap is acidic (B) Water alone causes the change
(C) The shirt dye reacts with turmeric (D) Soap is basic and turmeric acts as an indicator

Achievers Section

Q16–Q18 · 3 marks each

16. Consider the following statements.
(i) All acids are dangerous and cannot be eaten.
(ii) Neutralisation always produces a salt and water.
(iii) Distilled water is neutral to litmus.
Which of the statements is/are correct?
- (A) (i) and (ii) only (B) (ii) and (iii) only
(C) (i) and (iii) only (D) All three

17. A student adds a base drop by drop to a beaker of acid containing a few drops of phenolphthalein, which is colourless in acid and pink in base. What will she observe at the exact point of neutralisation?
- (A) The solution stays colourless and one more drop turns it permanently pink (B) The solution turns pink at once from the first drop
- (C) The solution turns red (D) No change ever occurs
18. Rainwater is naturally slightly acidic, but in industrial areas it becomes far more acidic and damages buildings. What is the best explanation?
- (A) Rainwater dissolves dust from the roads (B) Gases such as sulphur dioxide and nitrogen oxides dissolve in rainwater to form acids
- (C) Rainwater becomes hot in cities (D) Buildings are made of acidic stone

Answer Key

1	A	2	D	3	A	4	B	5	C
6	D	7	A	8	B	9	C	10	C
11	D	12	A	13	B	14	C	15	D
16	B	17	A	18	B				

Solutions

1. Answer: (A) Acids

Acids taste sour and turn blue litmus red. Bases taste bitter, feel soapy and turn red litmus blue.

2. Answer: (D) Citric acid

Lemons, oranges and other citrus fruits contain **citric acid**. Vinegar contains acetic acid and curd contains lactic acid.

3. Answer: (A) Litmus

Litmus is extracted from lichens, so it is a natural indicator. Turmeric and china rose petals are natural indicators too, while phenolphthalein and methyl orange are synthetic.

4. Answer: (B) Red

Turmeric is yellow and turns **red** with a base. This is why a stain of turmeric on cloth turns reddish when soap, which is basic, is rubbed on it.

5. Answer: (C) Neutralisation

Neutralisation is the reaction $\text{acid} + \text{base} \rightarrow \text{salt} + \text{water}$. Heat is usually given out as well.

6. Answer: (D) Soap solution

Only a base turns red litmus blue. **Soap solution** is basic; lemon juice, vinegar and curd are all acidic.

7. Answer: (A) Hydrochloric acid

The stomach secretes **hydrochloric acid**, which helps digest food and kills germs in it.

8. Answer: (B) Neutral

A **neutral** solution has no effect on either red or blue litmus. Pure water and common salt solution are neutral.

9. Answer: (C) Row (C)

Tamarind contains **tartaric acid**, not citric acid; citric acid comes from citrus fruits such as lemons and oranges. The other three rows are correct.

10. Answer: (C) It is a mild base that neutralises the excess acid

Milk of magnesia is magnesium hydroxide, **a mild base that neutralises the excess hydrochloric acid** in the stomach, giving relief. This is neutralisation put to everyday use.

11. Answer: (D) Baking soda solution

An ant injects formic acid. **Baking soda solution is basic**, so it neutralises the acid and eases the pain. Lemon juice, vinegar and curd are all acidic and would make it worse.

12. Answer: (A) To neutralise the acid, so it does not harm aquatic life

Acidic waste would kill fish and plants and corrode pipes. Adding a base **neutralises the acid**, bringing the waste close to neutral so it does not harm aquatic life.

13. Answer: (B) Neutralisation

Lime is a base, so adding it to acidic soil is **neutralisation**. If a soil is too basic instead, organic matter such as compost is added to make it more acidic.

14. Answer: (C) Sodium hydroxide solution

Blue litmus is turned red by acids but is unchanged by bases and neutral solutions. **Sodium hydroxide solution** is a base, so the paper stays blue. The other three are acids.

15. Answer: (D) Soap is basic and turmeric acts as an indicator

Turmeric is a natural indicator that turns red in the presence of a base. **Soap is basic**, so rubbing it on the stain produces the red colour. Washing with plenty of water removes the soap and the red colour fades.

16. Answer: (B) (ii) and (iii) only

Statement (i) is false — many acids are perfectly safe to eat, such as the citric acid in lemons and the acetic acid in vinegar; it is strong mineral acids that are dangerous. Statements (ii) and (iii) are both true. Hence **(ii) and (iii)**.

17. Answer: (A) The solution stays colourless and one more drop turns it permanently pink

While any acid remains, the indicator stays colourless. As the last of the acid is used up the solution becomes neutral, and **one further drop of base makes it permanently pink**. That first lasting pink marks the end point of the neutralisation.

18. Answer: (B) Gases such as sulphur dioxide and nitrogen oxides dissolve in rainwater to form acids

Burning coal and fuel releases **sulphur dioxide and nitrogen oxides**, which dissolve in rain droplets to form sulphuric and nitric acids. This acid rain reacts with the marble and limestone of buildings, eating them away — the damage to the Taj Mahal is the best-known example.