

Name \_\_\_\_\_ Date \_\_\_\_\_



## ACIDS AND BASES QUIZ – Answer Key

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1. Define the following:

a. Strong acid

- Acids whose pH values range between 0 and 3
- Strong acids completely dissociate into ions ( $H^+$  and an anion) when dissolved in water.

b. Weak acid

- Acids whose pH values range between 4 and 7
- Weak acids only partially dissociate into ions when dissolved in water.

c. Strong base

- Bases whose pH values range between 7.1 and 10
- Strong bases completely dissociate into ions ( $OH^-$  and a cation) when dissolved in water.

d. Weak base

- Bases whose pH values range between 10 and 14
- Weak bases only partially dissociate into ions when dissolved in water.

2. Group the following substances as Acidic, Basic, Or Neutral

Lemon juice

Soap

Sour milk

Pure water

Wood ash solution

Common salt solution

Toothpaste

Ammonium solution

Vinegar

Acidic	Basic	Neutral
Lemon juice, Sour milk	Wood ash solution Toothpaste	Water Common salt solution

Vinegar	Soap Ammonium solution	
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3. What is the products of the reaction between a dilute acid with a:

- Metal: **Salt and Hydrogen gas.**
- Metal hydroxide: **Salt and Water**
- Metal Oxide: **Salt and Water**
- Carbonate: **Salt, Carbon dioxide, and Water**

4. Complete the word equations below to illustrate the properties of acids:

- Acid + metal  $\rightarrow$  salt + **Hydrogen gas.**
- Acid + bases  $\rightarrow$  salt+ **water.**
- Acid+ metal carbonate  $\rightarrow$  salt+ **carbon IV oxide + water.**
- Acid + metal hydrogen carbonate  $\rightarrow$  **salt+ carbon IV oxide + water.**

5. Complete the following word equations involving the reaction between acids and bases:

- Magnesium oxide + nitric acid  $\rightarrow$  **Magnesium nitrate + Water**
- Sodium hydrogen carbonate + sulphuric acid  $\rightarrow$  **Sodium chloride + Water+ Carbon (IV) oxide**
- Copper (II) oxide + hydrochloric acid  $\rightarrow$  **Copper chloride + Water**  
Ammonium hydroxide + sulphuric acid  $\rightarrow$  **Ammonium sulphate +Water**

IV. Potassium carbonate + sulphuric acid  $\rightarrow$  **Potassium sulphate+ Water+ Carbon (IV) oxide**

6. Explain why all alkalis are bases but not all bases are alkalis

**Alkalis are soluble bases but not all bases are soluble in water**

7. Acids and bases have several uses.

- Name the acids used in:
  - Car batteries: **Sulphuric acid**

- b. Vinegar: **Ethanoic acid**
- II. Name the bases used in:
  - a. Antacids: **Magnesium hydroxide/Aluminum oxide**
  - b. Liming of acids in soils to reduce acidity: **Calcium oxide/Calcium hydroxide**